

# **EXHIBIT B31**

1 IN THE UNITED STATES DISTRICT COURT  
2 FOR THE EASTERN DISTRICT OF NEW JERSEY

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4

5 IN RE: JOHNSON & :  
6 JOHNSON TALCUM POWDER :  
7 PRODUCTS MARKETING, :  
8 SALES PRACTICES, AND : NO. 16-2738  
9 PRODUCTS LIABILITY : (FLW) (LHG)  
10 LITIGATION :  
11 :  
12

13 THIS DOCUMENT RELATES :  
14 TO ALL CASES :  
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16 - - -  
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18  
19 January 21, 2019  
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21 - - -  
22

23 Videotaped deposition of  
24 JUDITH ZELIKOFF Ph.D., taken pursuant to  
notice, was held at the Sheraton Mahwah  
Hotel, 1 International Boulevard, Mahwah,  
New Jersey, beginning at 9:11 a.m., on  
the above date, before Michelle L. Gray,  
a Registered Professional Reporter,  
Certified Shorthand Reporter, Certified  
Realtime Reporter, and Notary Public.

- - -

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8 By Mr. Ferguson 442  
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<p style="text-align: right;">Page 14</p> <p>1 BY MR. HEGARTY: 2 Q. Good morning, Dr. Zelikoff. 3 A. Good morning. 4 Q. My name is Mark Hegarty. I 5 represent the J&amp;J defendants in this 6 action. Can you please state your full 7 name for the record, please? 8 A. Judith Terri Zelikoff. 9 Q. Dr. Zelikoff, who is your 10 current employer? 11 A. New York University School 12 of Medicine, also known as NYU Langone 13 Health. 14 Q. What is your title at New 15 York University School of Medicine? 16 A. Professor with tenure. 17 Q. How long have you held that 18 position? 19 A. Since 1982. 20 Q. Do you have any separate 21 personal consulting business for 22 litigation purposes? 23 A. I do not. 24 Q. Where do the fees go that</p>	<p style="text-align: right;">Page 16</p> <p>1 plaintiffs' counsel for your services in 2 this litigation? 3 A. \$350 per hour. 4 Q. Is there any difference in 5 your rate depending on whether it's 6 literature review, sitting for a 7 deposition, trial testimony? 8 A. Sitting for a deposition or 9 trial testimony is \$450. 10 Q. Did anyone outside of 11 plaintiffs' attorneys assist you in any 12 way with your expert report in this case? 13 A. No one with my expert 14 report. 15 Q. We were provided today a 16 copy of several invoices that you have 17 prepared for your work in this case. I'm 18 going to mark as Exhibit Number 1 a copy 19 of those invoices. 20 (Document marked for 21 identification as Exhibit 22 Zelikoff-1.) 23 BY MR. HEGARTY: 24 Q. Dr. Zelikoff, would you look</p>
<p style="text-align: right;">Page 15</p> <p>1 you earn as an expert witness in this 2 case? 3 A. They go to household 4 expenses as well as charity. 5 Q. But they go to you, correct? 6 A. They go to me. 7 Q. Other than your work at New 8 York University and the fees that you're 9 earning as part of this litigation, do 10 you have any other sources of income? 11 A. Just income that I have from 12 advisory boards or -- when you -- when 13 you sit on panels, they also pay you. 14 But other than that, no. 15 Q. Tell me an example of an 16 advisory board for which you receive 17 income. 18 A. It's on a very sporadic 19 basis. And it depends on what it is. 20 But the NIEHS, National Institute of 21 Environmental Health Sciences. And it's 22 an NIH institute. And I serve as a -- I 23 review grants for them. 24 Q. What are you charging</p>	<p style="text-align: right;">Page 17</p> <p>1 at Exhibit Number 1 and tell me whether 2 those are all the invoices that you have 3 generated and provided to plaintiffs' 4 counsel in this case. 5 A. It appears to be. 6 Q. Thank you. The last work 7 noted is December 24, 2018. 8 Have you spent any 9 additional time on this case for which 10 you intend to bill plaintiffs' counsel -- 11 A. Yes, I have. 12 Q. -- that's not reflected in 13 the invoices? 14 A. Yes, I have. 15 Q. How much additional time? 16 A. Approximately 25 to 30 hours 17 by the end of this deposition. Not 18 including the deposition. 19 Q. With regard to these 20 invoices, have they all been paid? 21 A. Yes, they have. 22 Q. Were you paid a retainer for 23 your work on this case? 24 A. I don't recall.</p>

<p style="text-align: right;">Page 18</p> <p>1 Q. Dr. Zelikoff, as you know 2 we're here to take your deposition in the 3 case of In Re Johnson &amp; Johnson Talc 4 Litigation, which is an MDL setting. Are 5 you aware you've been designated as an 6 expert in that case? 7 A. I am aware. 8 Q. When were you first 9 contacted about serving as an expert in 10 this case? 11 A. Early 2017. I was 12 requested -- I was requested if I had 13 interest in it. 14 Q. The first invoice that you 15 provided has a date of April 5, 2017. 16 When in relation to the first invoice 17 entry was that initial contact? 18 A. To the best of my knowledge, 19 it was January or February. 20 Q. Of 2017? 21 A. Of 2017, right. 22 Q. Who contacted you? 23 A. Jennifer Emmel. 24 Q. Did you know her before she</p>	<p style="text-align: right;">Page 20</p> <p>1 representing plaintiffs? 2 A. No, sir. 3 Q. Did you agree to serve as an 4 expert witness at the time of Ms. Emmel's 5 first contact with you? 6 A. No, sir. I told her that I 7 would have to do some literature 8 searching myself and come up with a 9 conclusion as to whether or not I felt 10 comfortable based on the science in 11 serving in that capacity. 12 Q. At one point -- at what 13 point between -- at what point did you 14 come to or did -- strike that. 15 At what point did you agree 16 to serve as an expert witness in this 17 litigation in relation to that first 18 call? 19 A. Probably about a month 20 later. 21 Q. What did Ms. Emmel tell you 22 at that first call about the litigation? 23 MS. O'DELL: We just 24 instruct -- I mean conversations,</p>
<p style="text-align: right;">Page 19</p> <p>1 contacted you? 2 A. Not at all. 3 Q. How was the contact made, by 4 telephone? 5 A. By telephone. 6 Q. Apart from anything that 7 attorneys for plaintiffs may have told 8 you, do you know how she came to contact 9 you? 10 A. I'm not aware as to how she 11 came to contact me. 12 Q. Did you have any prior 13 litigation work with her? 14 A. Not with Ms. Emmel, no. 15 Q. How do you spell her name? 16 A. How do I -- 17 Q. Yes. 18 A. -- spell her name? 19 Q. Yes. 20 A. To the best of my knowledge, 21 it's E-M-M-E-L. 22 Q. Have you had any prior 23 litigation work with any of the lawyers 24 with whom you have met that are</p>	<p style="text-align: right;">Page 21</p> <p>1 in terms of -- let me just strike 2 that and say don't discuss 3 anything that you communicated to 4 us or we communicated to you after 5 you decided to become an expert in 6 the case. 7 BY MR. HEGARTY: 8 Q. Correct. I'm talking about, 9 right now I'm talking about that initial 10 phone call where you said you had not -- 11 where you did not agree at that point in 12 time to serve as an expert witness. 13 That's the only call I'm talking about. 14 What did Ms. Emmel tell you 15 about the litigation or about what they 16 wanted you to do at that first call? 17 A. Well, I don't remember the 18 details as it was about over a year ago. 19 But to the best of my knowledge and my 20 recollection, it was just that they 21 represented the plaintiffs in a case of 22 ovarian cancer and its relationship to 23 talcum powder products, and was I 24 familiar with it, did I know anything</p>

<p style="text-align: right;">Page 22</p> <p>1 about it, and did I have -- did I have 2 interest in being associated with, and I 3 responded to her that I follow the 4 science, that's all I do is I follow the 5 science. 6 And if the science leads me 7 in a direction that I would have interest 8 or that I felt comfortable in doing this, 9 then I would let her know. 10 Q. What was your response when 11 she asked you if you were familiar with 12 the science of talc and ovarian cancer? 13 A. I was familiar with it at 14 that time in a superficial manner. I 15 work in a very high-powered department of 16 environmental medicine. And we discuss 17 current events over lunch. 18 Q. When you say in a 19 superficial manner, what do you mean? 20 A. Certainly not to the depth 21 that I'm aware of the issue currently. 22 Q. Is it correct that you had 23 not formed any opinions as to any link 24 between talc and ovarian cancer as of the</p>	<p style="text-align: right;">Page 24</p> <p>1 the time that you agreed to serve as an 2 expert witness in the case? 3 A. No, not -- not to my 4 recollection. 5 Q. Do you recall anything else 6 that you discussed with Ms. Emmel at that 7 first call besides what we talked about 8 already? 9 A. No, sir. 10 Q. Did Ms. Emmel at that first 11 call tell you anything about plaintiffs' 12 theory of causation or theory of 13 mechanism of action or biologic 14 plausibility? 15 A. No, sir, not at all. 16 Q. Did she send you any 17 documents before you agreed to serve as 18 an expert witness? 19 A. Not to my knowledge. I 20 think the -- I'm sure the literature 21 reviews that I did at that time were 22 solely my own. 23 Q. Had you heard of lawsuits 24 involving talc and ovarian cancer before</p>
<p style="text-align: right;">Page 23</p> <p>1 time of that first call with Ms. Emmel? 2 A. I had -- I had no opinion at 3 that time. 4 Q. Did you have any discussions 5 with Ms. Emmel or any other lawyer 6 representing plaintiffs between that 7 initial phone call and when you agreed to 8 serve as an expert witness? 9 A. To my -- to the best of my 10 knowledge, I had not spoken to 11 Ms. O'Dell. So to the best of my 12 knowledge it was just Ms. Emmel. 13 Q. Again, focusing on that 14 first phone call -- well, strike that. 15 Had you had any further 16 discussion with Ms. Emmel between the 17 time of that first call and the time you 18 agreed to serve as an expert witness? 19 A. I'm sorry, between the time 20 of the first call and the time I agreed, 21 could you repeat the question please? 22 Q. Sure. Did you have any 23 additional discussions with Ms. Emmel 24 between the time of the first call and</p>	<p style="text-align: right;">Page 25</p> <p>1 being contacted by Ms. Emmel? 2 A. I actually had not. 3 Q. What then were your sources 4 of knowledge about talc and ovarian 5 cancer as of the time of the first call? 6 A. The media, whatever I might 7 have read in the paper and any 8 discussions that might have been brought 9 up by my colleagues. 10 Q. Do you recall any colleague 11 who brought the -- anything up about talc 12 and ovarian cancer? 13 A. I do not recall a specific 14 colleague. Lunchroom chatter. 15 Q. Did you form any opinions 16 from the material you did read in the 17 media or from discussion with your 18 colleagues? 19 A. I had no opinion. 20 Q. And you were ultimately 21 retained and asked to give expert 22 opinions in this case, correct? 23 A. I was ultimately retained, 24 yes, correct.</p>



<p style="text-align: right;">Page 26</p> <p>1 Q. The lawyers for the 2 plaintiffs in this case have paid you to 3 review materials and offer opinions, 4 correct? 5 MS. O'DELL: Objection to 6 the form. 7 THE WITNESS: Do I answer 8 the question? 9 BY MR. HEGARTY: 10 Q. Yes. 11 MS. O'DELL: Yes. 12 THE WITNESS: They have 13 remunerated me for my time and 14 effort in reading hundreds of 15 articles. 16 BY MR. HEGARTY: 17 Q. The opinions that you've 18 formulated were ultimately set out in 19 your November 16, 2018, MDL report, 20 correct? 21 A. That's correct. 22 Q. The hours you spent in 23 preparing that report are reflected in 24 the invoices we marked as Exhibit</p>	<p style="text-align: right;">Page 28</p> <p>1 testify today? 2 A. It would be in my invoice, 3 but if I had to approximate that without 4 the knowledge of having that in front of 5 me, I would say 30 to 50 hours. 6 Q. What attorneys did you meet 7 with to prepare for your deposition here 8 today? 9 A. I met with Ms. O'Dell and 10 Ms. Emmel. 11 Q. Anyone else? 12 A. In a face-to-face. 13 Q. Face-to-face. There were 14 phone calls as well? 15 A. There were -- one of -- one 16 of the phone calls, it may have been two. 17 I also -- Chris, and I'm not familiar 18 with your last name, sorry. 19 Chris from the -- 20 MS. O'DELL: Tisi. 21 THE WITNESS: Tisi? Chris 22 Tisi and Alistair -- 23 MR. FINDEIS: Findeis. 24 MS. O'DELL: Findeis.</p>
<p style="text-align: right;">Page 27</p> <p>1 Number 1, correct? 2 A. I don't recall what exhibit 3 number it is, but it is in one of the 4 invoices. 5 Q. A description that you have 6 in your invoices includes report 7 preparation. Is that a description which 8 describes your -- the time you spent 9 preparing your report? 10 A. Yes, it is. 11 Q. Every entry under report 12 preparation would be the time that you 13 spent preparing your report? 14 A. Yes, that's true. That 15 could include reading material, searching 16 for material or writing. 17 Q. The invoices we marked as an 18 exhibit also reflect the time you spent 19 with lawyers for plaintiffs; is that 20 correct? 21 A. It does. 22 Q. With regard to your 23 deposition here today, how much time did 24 you spend preparing to come here and</p>	<p style="text-align: right;">Page 29</p> <p>1 THE WITNESS: Findeis -- was 2 on the phone, and there may have 3 been one or two others, but I 4 don't recall. 5 BY MR. HEGARTY: 6 Q. Have you spoken with any of 7 your colleagues about your work in this 8 litigation? 9 A. What -- can you explain what 10 you mean by colleagues? 11 Q. Well, you mentioned 12 colleagues in discussing talc and ovarian 13 cancer. So those colleagues. 14 A. If -- do you mean other 15 faculty? 16 Q. Correct. 17 A. And the question again, 18 please? 19 Q. Sure. Have you spoken with 20 other faculty at New York University 21 regarding your work on this litigation? 22 A. No, I have not. 23 Q. Have you told any faculty at 24 New York University of your opinions in</p>

<p style="text-align: right;">Page 30</p> <p>1 this case?</p> <p>2 A. I have not.</p> <p>3 Q. Have you told anyone at NYU</p> <p>4 School of Medicine of your opinions?</p> <p>5 A. I have not. I have</p> <p>6 discussed, not my opinion, but in my</p> <p>7 class, my toxicology course, to graduate</p> <p>8 students at NYU.</p> <p>9 I have, in my course on</p> <p>10 speaking about reproductive toxicology</p> <p>11 and developmental toxicology, in</p> <p>12 discussing risk factors, two graduate</p> <p>13 students I have discussed -- I've</p> <p>14 included talc as a potential risk factor.</p> <p>15 Q. When did you start including</p> <p>16 talc as a potential risk factor in that</p> <p>17 course?</p> <p>18 A. Prior -- if you're asking me</p> <p>19 was it prior to or -- prior to my</p> <p>20 retainment, it was prior to my</p> <p>21 retainment.</p> <p>22 Q. So prior to your</p> <p>23 retainment -- let me -- let me word it</p> <p>24 differently.</p>	<p style="text-align: right;">Page 32</p> <p>1 A. Yes.</p> <p>2 Q. Does that continue to be the</p> <p>3 extent of any discussion you had with any</p> <p>4 students at New York University about</p> <p>5 talc and ovarian cancer?</p> <p>6 A. Well, right now we're on</p> <p>7 break. I -- I probably will -- I will</p> <p>8 continue after the deposition to also</p> <p>9 talk -- talk with them and list it as</p> <p>10 a -- as a risk factor for ovarian cancer.</p> <p>11 Q. What about -- strike that.</p> <p>12 Did you have discussions,</p> <p>13 that same discussion with toxicology</p> <p>14 students between -- I should say before</p> <p>15 you were contacted by Ms. Emmel and</p> <p>16 today, have you had -- continued to have</p> <p>17 that same discussion with your toxicology</p> <p>18 students?</p> <p>19 A. I've not --</p> <p>20 MS. O'DELL: Objection to</p> <p>21 form.</p> <p>22 Doctor, give me just a</p> <p>23 moment after the question if I</p> <p>24 need to object. Thank you.</p>
<p style="text-align: right;">Page 31</p> <p>1 Prior to the call from</p> <p>2 Ms. Emmel, you had included in your</p> <p>3 course to -- your toxicology course a</p> <p>4 discussion about talc and ovarian cancer?</p> <p>5 A. Not a discussion, just</p> <p>6 didactic lecture saying that this is the</p> <p>7 female reproductive tract. Ovarian</p> <p>8 cancer is part of an adverse outcome of</p> <p>9 disease. It's very prevalent. And there</p> <p>10 are factors including early menarche,</p> <p>11 late menopause, and there's some issues</p> <p>12 currently on the table as to whether</p> <p>13 cosmetic talc also plays a role.</p> <p>14 No opinion was given to my</p> <p>15 class. Just information.</p> <p>16 Q. Do you have any materials</p> <p>17 for your course, whether in PowerPoint</p> <p>18 form or other form that sets out that</p> <p>19 discussion you just had?</p> <p>20 A. No.</p> <p>21 Q. Is that the extent of the</p> <p>22 discussion that you had with your</p> <p>23 toxicology students about talc and</p> <p>24 ovarian cancer?</p>	<p style="text-align: right;">Page 33</p> <p>1 THE WITNESS: Shall I</p> <p>2 continue?</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Sure.</p> <p>5 A. Could you repeat the</p> <p>6 question, please?</p> <p>7 Q. Sure. You mentioned that</p> <p>8 the discussion that we just went over was</p> <p>9 before your contact by Ms. Emmel,</p> <p>10 correct?</p> <p>11 A. I said that it started. My</p> <p>12 lectures started prior to my conversation</p> <p>13 with Ms. Emmel.</p> <p>14 Q. What was -- what was the</p> <p>15 name of the course that you had that</p> <p>16 lecture?</p> <p>17 A. Organ system toxicology.</p> <p>18 Q. Have you taught that course</p> <p>19 since your call with Ms. Emmel?</p> <p>20 A. Actually it's coming up</p> <p>21 this -- this semester, starting the 30th</p> <p>22 of January.</p> <p>23 Q. So between -- as of the</p> <p>24 first part of 2017 through today you have</p>

<p style="text-align: right;">Page 34</p> <p>1 not taught that same course?</p> <p>2 A. It's taught every other</p> <p>3 year.</p> <p>4 Q. Have you communicated with</p> <p>5 anyone outside of plaintiffs' counsel in</p> <p>6 this case about your opinions in your</p> <p>7 report?</p> <p>8 A. Not about my opinions, no.</p> <p>9 Q. Have you talked with anyone</p> <p>10 outside of plaintiffs' counsel in this</p> <p>11 case about your report?</p> <p>12 A. Only to say that I -- to my</p> <p>13 friends, when I refuse to go anywhere</p> <p>14 with them, because I have to stay home</p> <p>15 and work, only to say that I'm working on</p> <p>16 a report.</p> <p>17 Q. Have you discussed the</p> <p>18 litigation or your report with any other</p> <p>19 experts retained by the plaintiffs in</p> <p>20 this case?</p> <p>21 A. No, sir, I have not.</p> <p>22 Q. Have you reviewed any of the</p> <p>23 other plaintiffs' experts' MDL reports in</p> <p>24 this litigation besides those referenced</p>	<p style="text-align: right;">Page 36</p> <p>1 Exhibit B. It should be the very last</p> <p>2 page of that document.</p> <p>3 A. Thank you.</p> <p>4 Q. The very last page of</p> <p>5 Exhibit B of your report, you list a</p> <p>6 number of expert reports, correct?</p> <p>7 A. I do. Deposition and</p> <p>8 exhibits.</p> <p>9 Q. Have you reviewed any other</p> <p>10 expert reports -- strike that.</p> <p>11 Did you review any other</p> <p>12 expert reports for purposes of your</p> <p>13 expert report besides those listed here?</p> <p>14 A. No, sir. Unless --</p> <p>15 Dr. Longo, December 2018 supplement, that</p> <p>16 was a report, and I did review that.</p> <p>17 Q. We were provided today with</p> <p>18 a copy of a report of Longo and Rigler,</p> <p>19 January 15, 2019. And I'm going to mark</p> <p>20 that as Exhibit 3.</p> <p>21 (Document marked for</p> <p>22 identification as Exhibit</p> <p>23 Zelikoff-3.)</p> <p>24 BY MR. HEGARTY:</p>
<p style="text-align: right;">Page 35</p> <p>1 in your report?</p> <p>2 A. I reviewed Dr. Dydek's. I</p> <p>3 reviewed -- did you say the plaintiffs'</p> <p>4 witnesses?</p> <p>5 Q. Yeah, let me -- let me -- in</p> <p>6 your report -- and I can -- we can get it</p> <p>7 out here in a moment. But you list</p> <p>8 the -- in your list of reports, you list</p> <p>9 the report of Michael Crowley.</p> <p>10 A. I'm sorry, sir. Can you --</p> <p>11 Q. It's in Exhibit B at the end</p> <p>12 of Exhibit B of your report. If you need</p> <p>13 a copy I can give it to you now.</p> <p>14 A. Can you give me a copy.</p> <p>15 (Document marked for</p> <p>16 identification as Exhibit</p> <p>17 Zelikoff-2.)</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. I'm marking Exhibit 2 Dr.</p> <p>20 Zelikoff's report that was provided to us</p> <p>21 in this case.</p> <p>22 A. Thank you. And what page</p> <p>23 are you referring to?</p> <p>24 Q. It is the last page of</p>	<p style="text-align: right;">Page 37</p> <p>1 Q. Is that the supplemental</p> <p>2 report that you described for us?</p> <p>3 A. It is, sir. It's an</p> <p>4 analysis Johnson &amp; Johnson Historical</p> <p>5 Product Containers and Imerys' Historical</p> <p>6 Railroad Car Samples, etc..</p> <p>7 Q. That report is dated</p> <p>8 January 15th, 2019, correct?</p> <p>9 A. Yes, sir.</p> <p>10 Q. When did you receive this</p> <p>11 report?</p> <p>12 A. In January.</p> <p>13 Q. When in relation to</p> <p>14 January 15, 2019?</p> <p>15 A. Today is the --</p> <p>16 Q. Is the 21st.</p> <p>17 A. Today is the 21st. I would</p> <p>18 say somewhere between the 15th and the</p> <p>19 21st. Actually it was this past Saturday</p> <p>20 as it was placed in my Dropbox and I</p> <p>21 could not open my Dropbox.</p> <p>22 Q. When did you review Exhibit</p> <p>23 Number 3?</p> <p>24 A. That same report?</p>

<p style="text-align: right;">Page 38</p> <p>1 Q. Yes.</p> <p>2 A. I received it on Saturday.</p> <p>3 I reviewed it on Sunday.</p> <p>4 Q. How much time did you spend</p> <p>5 reviewing this additional Longo and</p> <p>6 Rigler report?</p> <p>7 A. Sorry. About three hours.</p> <p>8 Q. Did you read every page?</p> <p>9 A. I read -- I reviewed each</p> <p>10 page but I did not scrutinize every page.</p> <p>11 Q. Did you read the entirety of</p> <p>12 the text in this supplemental report?</p> <p>13 A. May I see the report,</p> <p>14 please.</p> <p>15 MS. O'DELL: Objection.</p> <p>16 Asked and answered. That's the</p> <p>17 same question.</p> <p>18 THE WITNESS: Should I</p> <p>19 answer?</p> <p>20 MS. O'DELL: Yes, you may.</p> <p>21 THE WITNESS: I reviewed the</p> <p>22 text going up to Page 32 with</p> <p>23 greater rigor than I did the</p> <p>24 tables.</p>	<p style="text-align: right;">Page 40</p> <p>1 A. The attorneys.</p> <p>2 Q. I'm going to show you --</p> <p>3 A. Plaintiffs' attorneys.</p> <p>4 (Document marked for</p> <p>5 identification as Exhibit</p> <p>6 Zelikoff-4.)</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. I'm going to show you what I</p> <p>9 marked as Exhibit Number 4. This is the</p> <p>10 MDL report provided to us for Michael</p> <p>11 Crowley.</p> <p>12 A. Mm-hmm.</p> <p>13 Q. Did you read the entirety of</p> <p>14 that report?</p> <p>15 A. I cannot say that I read the</p> <p>16 entirety of this report. I reviewed the</p> <p>17 report.</p> <p>18 Q. Okay. Well, your report is</p> <p>19 dated November 16, 2018. And that report</p> <p>20 is dated November 12, 2012, -- 2018.</p> <p>21 When did you receive the report by</p> <p>22 Dr. Crowley in relation to the date on</p> <p>23 the first page, November 12th.</p> <p>24 A. I really cannot say with</p>
<p style="text-align: right;">Page 39</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. When you say "reviewed,"</p> <p>3 does that mean that you read every -- all</p> <p>4 the words on every page up to Page 32?</p> <p>5 A. I did.</p> <p>6 Q. You included in the list of</p> <p>7 reports that you reviewed, the report of</p> <p>8 Michael Crowley, correct?</p> <p>9 A. Every one of the reports</p> <p>10 were not read with the -- read with</p> <p>11 the -- sorry, I'm caught up in the</p> <p>12 microphone -- were not read with the same</p> <p>13 intensity and duration of time put into</p> <p>14 it. I reviewed it. To what extent, I'm</p> <p>15 not clear at this moment.</p> <p>16 Q. The first report that you</p> <p>17 list in the list of reports in Exhibit B</p> <p>18 is the expert report of Michael M.</p> <p>19 Crowley, correct?</p> <p>20 A. It's written that way, yes.</p> <p>21 Q. Did you prepare this list of</p> <p>22 reports?</p> <p>23 A. I did not.</p> <p>24 Q. Who did?</p>	<p style="text-align: right;">Page 41</p> <p>1 certainty. It seems to me that I</p> <p>2 received this prior to my report</p> <p>3 conclusion.</p> <p>4 Q. There are 212 pages there.</p> <p>5 Again, did you read every word of every</p> <p>6 page?</p> <p>7 A. No, sir. Did I look at</p> <p>8 every word of every page? Yes.</p> <p>9 Q. No, my question is did you</p> <p>10 read every word of every page.</p> <p>11 A. My answer is --</p> <p>12 MS. O'DELL: She answered</p> <p>13 your question.</p> <p>14 THE WITNESS: -- I looked at</p> <p>15 every page.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Did you read all the</p> <p>18 references that he has in that report?</p> <p>19 A. I looked at the references.</p> <p>20 Q. Did you actually pull the</p> <p>21 references and read the citations that he</p> <p>22 refers to?</p> <p>23 A. No, sir. I did my own -- my</p> <p>24 own literature search in terms of</p>

<p style="text-align: right;">Page 42</p> <p>1 fragrance and chemicals within the 2 fragrances. And I did receive that as an 3 exhibit this morning. 4 Q. I'm sorry. What did you 5 say? 6 A. I said I did my own 7 literature search in terms of fragrances, 8 and I think you received a copy of that 9 this morning. In that report that I did, 10 that I prepared, I was assessing 11 carcinogenicity of each of the compounds. 12 Q. Going back to the Crowley 13 report, did you read all the tables in 14 that report? 15 A. I did not read. I reviewed. 16 Q. What is -- 17 A. I looked at them. 18 Q. Okay. What is the 19 difference between reading and reviewing 20 to you? 21 A. In my mind, reading is 22 in-depth assessment, and whereas 23 reviewing is looking over. Reading is 24 more intense.</p>	<p style="text-align: right;">Page 44</p> <p>1 Dr. Crowley's report. And with that I -- 2 I used the case number. I reviewed each 3 one of the chemicals in terms of their 4 potential carcinogenicity by, number one, 5 putting -- writing down the chemical, 6 looking to see if there were other 7 structures or chemicals -- or chemicals 8 that had similar names. 9 I reviewed through Google, 10 through PubMed and through Tox Lit and 11 IARC reports to see whether or not there 12 was a listing for them in terms of 13 carcinogenicity. And that is the result. 14 This is the result. 15 Q. When did you do all of that? 16 A. I did that post the 17 report -- 18 Q. When -- sorry. 19 A. -- as part of my preparation 20 for the deposition. 21 Q. When did you do it post 22 report in relation to today? 23 A. One to two weeks ago. 24 Q. Did you review -- strike</p>
<p style="text-align: right;">Page 43</p> <p>1 Q. You pointed to us -- pointed 2 to us -- strike that. 3 You pointed to the document 4 that was provided to us this morning, 5 which you say is -- what I think you said 6 reflects your own literature search with 7 regard to fragrances; is that correct? 8 A. Mine and a student. 9 Q. What student? 10 A. A graduate student in my 11 laboratory. 12 (Document marked for 13 identification as Exhibit 14 Zelikoff-5.) 15 BY MR. HEGARTY: 16 Q. I've marked as Exhibit 17 Number 5 the document that was produced 18 to us this morning. Can you tell me what 19 Exhibit Number 5 is. 20 A. Exhibit Number 5 is -- is a 21 list of the chemicals that -- part of 22 which, if not in its entirety, were taken 23 from the fragrances that were -- and the 24 chemicals that were listed in</p>	<p style="text-align: right;">Page 45</p> <p>1 that. 2 Did you read all the MSDSes 3 that you list in Exhibit Number 5? 4 A. I did not read all of the 5 MSDSes. But I did look at them. I 6 reviewed them to make sure they were 7 accurate. 8 Q. Did you -- did you look at 9 and review every MSDS listed in Exhibit 10 Number 5? 11 A. No, sir. 12 Q. I'm sorry? 13 A. No, sir. 14 Q. Approximately how many did 15 you look at in review? 16 A. I would say I looked at 17 perhaps half. Looked -- looked at, not 18 reviewed. 19 Q. But with regard to your 20 analysis of the fragrances that are 21 reportedly in Johnson's Baby Powder, you 22 did not do any of your own analysis as of 23 the time of your report, correct? 24 A. I --</p>



<p style="text-align: right;">Page 46</p> <p>1 MS. O'DELL: Objection to 2 the form. 3 THE WITNESS: I did no 4 analysis except to gather the 5 information that is out there by 6 reputable organizations. 7 BY MR. HEGARTY: 8 Q. Well, did you gather that 9 information before you completed your 10 expert report? 11 A. I did this after my expert 12 report. 13 Q. And my question was, before 14 your expert report, did you do any of 15 your own analysis of the fragrances that 16 we -- are listed in Exhibit Number 5? 17 MS. O'DELL: Objection to 18 form. 19 THE WITNESS: I'm not sure 20 what you mean by analysis. 21 BY MR. HEGARTY: 22 Q. Well, did you do any of your 23 own research, review of the literature, 24 anything with regard to fragrances as of</p>	<p style="text-align: right;">Page 48</p> <p>1 THE WITNESS: I -- 2 post-report, I did my own search. 3 BY MR. HEGARTY: 4 Q. But my question was, before 5 your report, with regard to Dr. Crowley's 6 report, did you actually pull the 7 literature references that he cites and 8 read them yourself? 9 A. No, sir. 10 Q. You also make reference to 11 reviewing Dr. Longo's report, MDL report, 12 which is dated November 14, 2018. That's 13 in the last page of Exhibit Number B. Do 14 you see that? 15 A. I -- I see that, yes. 16 Q. Did you read every page of 17 that report? 18 A. No, sir, I did not. But I 19 did read every page of the December 2018 20 Longo mass supplement report. 21 Q. Well, focusing on the 22 November 14, 2018, report, that report is 23 over 2,000 pages. Are you aware of that? 24 A. Yes, sir.</p>
<p style="text-align: right;">Page 47</p> <p>1 the time of your signing of your expert 2 report November 16, 2018? 3 A. I very briefly looked up 4 limonene and eugenol. And it wasn't in 5 regards to this case. It was in regards 6 to work that I do with electronic 7 cigarettes. They are being used as 8 flavorants. 9 Q. Was that the extent of your 10 review of the fragrances as of the time 11 of your expert report, November 16, 2018? 12 MS. O'DELL: Object to form. 13 You may answer. 14 THE WITNESS: Whatever is in 15 the report from Dr. Crowley that 16 listed, I looked at those. 17 BY MR. HEGARTY: 18 Q. But as you indicated, you 19 did not read all the citations, the 20 literature resources that Dr. Crowley 21 cites in his report and review them 22 yourself? 23 MS. O'DELL: Object to the 24 form.</p>	<p style="text-align: right;">Page 49</p> <p>1 Q. Did you read all 2,000 2 pages? 3 A. No, sir. I did not. 4 Q. Did you read any of those 5 2,000 pages? 6 A. I reviewed several of those 7 pages. 8 Q. Okay. How about the rest of 9 the reports that are listed there? Did 10 you read every page of the reports that 11 are listed there? 12 A. I read every page of the 13 Dr. Thomas Dydek's report. And I read 14 two-thirds of Dr. Plunkett's. 15 Q. As to the rest, did you 16 review the remaining reports? 17 MS. O'DELL: Object to the 18 form. 19 BY MR. HEGARTY: 20 Q. Or not look at them at all? 21 A. I glanced over them. 22 Q. Do you recall if you were 23 ever provided any draft reports from any 24 of the plaintiffs' experts in the MDL,</p>

<p style="text-align: right;">Page 50</p> <p>1 where you understood them to be drafts?  2 A. I never received anything  3 that I understood to be a draft document.  4 (Document marked for  5 identification as Exhibit  6 Zelikoff-6.)  7 BY MR. HEGARTY:  8 Q. Dr. Zelikoff, I'm marking  9 Exhibit Number 6 a copy of your  10 deposition notice for purposes of today's  11 deposition.  12 A. Yes, sir. I see it.  13 Q. Did you have a chance to  14 look at that before today?  15 A. I did not.  16 Q. What materials did you bring  17 with you to the deposition today?  18 MS. O'DELL: I would just  19 reassert that the objections that  20 plaintiffs have served regarding  21 certain of the requests and would  22 state that Dr. Zelikoff has  23 brought binders of her cited  24 materials, and then I believe I</p>	<p style="text-align: right;">Page 52</p> <p>1 Q. Is it correct that the  2 binders to your right are copies of  3 everything in -- under the listing --  4 under the heading of Materials and Data  5 Considered?  6 MS. O'DELL: Object to the  7 form.  8 THE WITNESS: I cannot say  9 that every single paper in here is  10 in there. Maybe in something that  11 I have looked up, but I can't say  12 with likely certainty that yes,  13 everything is in there. Although  14 I cannot tell you that I reviewed  15 every single one and matched it to  16 this page.  17 BY MR. HEGARTY:  18 Q. Who prepared -- who prepared  19 the document Materials and Data  20 Considered?  21 A. What do you mean by  22 prepared?  23 Q. Did you prepare it?  24 MS. O'DELL: Object to the</p>
<p style="text-align: right;">Page 51</p> <p>1 gave you a jump drive of all the  2 reference materials.  3 BY MR. HEGARTY:  4 Q. Let me go back to my  5 question. Sitting to your right are  6 binders of materials. Do you know what  7 those binders are, Dr. Zelikoff?  8 A. I do know what those black  9 binders are to my right.  10 Q. What are they?  11 A. They are binders containing  12 materials, papers, literature --  13 literature, in alphabetical order of  14 papers that are relevant to my -- to my  15 testimony, as well as production  16 documents which include letters, reports  17 of internal documents.  18 Q. Your Exhibit B in your  19 report starts with a page Materials and  20 Data Considered. Do you see that?  21 A. Page please?  22 Q. It's Exhibit B.  23 A. Materials and data  24 considered, I have it, yes, sir.</p>	<p style="text-align: right;">Page 53</p> <p>1 form.  2 THE WITNESS: I supplied  3 data, references, and in  4 coordination and complementation  5 with the plaintiffs' attorneys,  6 they prepared this.  7 (Document marked for  8 identification as Exhibit  9 Zelikoff-7.)  10 BY MR. HEGARTY:  11 Q. I'm marking as Exhibit  12 Number 7 a flash drive that we were  13 provided here today. Do you know what  14 Exhibit Number 7 is?  15 A. I do not.  16 Q. Do you know what's contained  17 on the flash drive?  18 A. I have not seen the data  19 within the flash drive.  20 MS. O'DELL: I'll just  21 represent that I prepared the  22 flash drive and the flash drive  23 has all the materials on  24 Exhibit B, on behalf of</p>

<p style="text-align: right;">Page 54</p> <p>1 Dr. Zelikoff. 2 BY MR. HEGARTY: 3 Q. Are the materials you also 4 cited -- I'm sorry. Are the references 5 you also cited in the body of your report 6 contained in those notebooks to your 7 knowledge? 8 A. To my knowledge, they are. 9 Q. Are the materials that -- 10 that are in those notebooks materials you 11 reviewed or had access to prior to 12 completion of your expert report? 13 A. Prior to the completion. 14 However I also prepared my own. So in 15 going through -- in coming to my 16 conclusion and opinion, I also went 17 through the literature using various 18 websites including, as I said Tox Lit, 19 Google and PubMed. And I arranged my 20 documents that I thought were relevant 21 after reviewing all of the ones that came 22 up in my literature search, and I 23 reviewed the abstracts and if I found 24 them to be relevant, I placed them in --</p>	<p style="text-align: right;">Page 56</p> <p>1 Q. You had not read that 2 manuscript though at the time you 3 completed your report, correct? 4 A. No, I did not, sir. 5 Q. So that manuscript did not 6 inform the opinions set out in your 7 report, correct? 8 MS. O'DELL: Objection to 9 form. 10 THE WITNESS: Do I answer? 11 MS. O'DELL: Yes, you may 12 answer. 13 THE WITNESS: Okay. 14 MS. O'DELL: Yes. 15 THE WITNESS: I -- I had 16 access to an abstract from the 17 same author with emerging results 18 that was brought forward in larger 19 context and in greater detail in 20 the publication. So I had -- so 21 the abstract did go into my 22 thinking. 23 BY MR. HEGARTY: 24 Q. The manuscript though we</p>
<p style="text-align: right;">Page 55</p> <p>1 in order and in bins, in silos, in 2 different areas, and I prepared my own. 3 Q. We were also provided today, 4 this morning, what I've marked as Exhibit 5 Number 8 which is a manuscript from a 6 publication called Reproductive Sciences. 7 The lead author, Ghassam Saed. 8 (Document marked for 9 identification as Exhibit 10 Zelikoff-8.) 11 BY MR. HEGARTY: 12 Q. Can you tell me when you 13 received that manuscript? 14 A. I received the manuscript in 15 December. 16 Q. Approximately when in 17 December? 18 A. Let me say that it was 19 either December or early January. I 20 cannot be more exact than that. 21 Q. Have you read that 22 manuscript? 23 A. Have I -- yes, I've read 24 this manuscript.</p>	<p style="text-align: right;">Page 57</p> <p>1 marked as Exhibit 8 did not go into your 2 thinking? 3 A. The manuscript -- no, sir, 4 it did not. It did post my report and it 5 added supplementary and compelling 6 evidence for my opinion. 7 (Document marked for 8 identification as Exhibit 9 Zelikoff-9.) 10 BY MR. HEGARTY: 11 Q. I've also marked as Exhibit 12 Number 9 another document we were 13 provided this morning which is -- which 14 is called Draft Screening Assessment. 15 When did you receive this 16 draft screening assessment? 17 A. January. 18 Q. Approximately when in 19 January? 20 A. About two weeks ago. 21 Q. Who -- what was your source 22 for getting that document? 23 A. Ms. Emmel. 24 Q. Did Ms. Emmel also provide</p>



<p style="text-align: right;">Page 58</p> <p>1 the -- the Saed manuscript?</p> <p>2 A. Yes, sir, she did.</p> <p>3 Q. So neither the Canadian</p> <p>4 assessment nor Dr. Saed's manuscript were</p> <p>5 materials you found on your own, correct?</p> <p>6 A. Correct.</p> <p>7 Q. Do you know how Ms. Emmel</p> <p>8 came to receive an unpublished</p> <p>9 manuscript, apart from any discussions</p> <p>10 that you had with plaintiffs' counsel?</p> <p>11 A. Actually, which manuscript</p> <p>12 are you referring to?</p> <p>13 Q. Well, there's only one</p> <p>14 manuscript in front of you?</p> <p>15 A. Reproductive Science --</p> <p>16 Q. Dr. -- yes.</p> <p>17 A. -- Dr. Saed?</p> <p>18 To my knowledge, this has --</p> <p>19 and seeing the cover letter that was</p> <p>20 associated with this, this is not a</p> <p>21 manuscript. This is an in-press</p> <p>22 manuscript, and there is a very large</p> <p>23 difference.</p> <p>24 Q. Okay. Apart from anything</p>	<p style="text-align: right;">Page 60</p> <p>1 that is a supplement of that or a -- an</p> <p>2 adjacent document.</p> <p>3 Q. Do you have that document</p> <p>4 with you?</p> <p>5 A. Perhaps. I do, yes, sir.</p> <p>6 Q. May I see it, please.</p> <p>7 (Document marked for</p> <p>8 identification as Exhibit</p> <p>9 Zelikoff-10.)</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. I'm going to mark as Exhibit</p> <p>12 Number 10 what you just handed to me,</p> <p>13 which is titled "Systematic Review and</p> <p>14 Meta-Analysis of the Association Between</p> <p>15 Perineal Use of Talc and Risk of Ovarian</p> <p>16 Cancer," lead author Taher.</p> <p>17 When did you receive Exhibit</p> <p>18 Number 10?</p> <p>19 MS. O'DELL: Did we skip</p> <p>20 nine?</p> <p>21 MR. HEGARTY: Exhibit 9 is</p> <p>22 the draft screening assessment.</p> <p>23 MS. O'DELL: Okay. I'm</p> <p>24 sorry. I had that as Number 8.</p>
<p style="text-align: right;">Page 59</p> <p>1 that counsel for plaintiffs may have told</p> <p>2 you, do you know how this manuscript</p> <p>3 became available for you to review?</p> <p>4 A. I have no knowledge.</p> <p>5 Q. With regard to the</p> <p>6 Canadian -- sorry, the draft screening</p> <p>7 assessment, did you read the entirety of</p> <p>8 this assessment?</p> <p>9 A. I'm looking for it right</p> <p>10 now.</p> <p>11 Q. Sorry.</p> <p>12 A. Thank you. Except for the</p> <p>13 references, I read the entirety of the</p> <p>14 text.</p> <p>15 Q. Did you pull the references</p> <p>16 and review the references themselves?</p> <p>17 A. No, sir, I did not.</p> <p>18 Q. There are also supplemental</p> <p>19 materials associated with this -- or do</p> <p>20 you know whether there are supplemental</p> <p>21 materials associated with this draft, or</p> <p>22 with this draft screening assessment?</p> <p>23 A. I was also provided a</p> <p>24 document by Dr. Taher. I'm not sure if</p>	<p style="text-align: right;">Page 61</p> <p>1 MR. HEGARTY: Number 8 is</p> <p>2 the manuscript by Dr. Saed.</p> <p>3 MS. O'DELL: Okay. I'm</p> <p>4 sorry.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Going back to my question,</p> <p>7 when did you receive the article by</p> <p>8 Taher?</p> <p>9 A. At the same time that I</p> <p>10 received the health -- the screening</p> <p>11 health assessment from Health Canada.</p> <p>12 Q. Who provided it to you?</p> <p>13 A. Ms. Emmel.</p> <p>14 Q. Did you read the entirety of</p> <p>15 that document?</p> <p>16 A. I read the entirety of this</p> <p>17 document minus the references.</p> <p>18 Q. Did you pull the literature</p> <p>19 cited in the Taher article and review it</p> <p>20 yourself?</p> <p>21 A. I may have looked at</p> <p>22 references that have -- were on the</p> <p>23 reference list of the Saed document, but</p> <p>24 I did not go through each individual</p>

<p style="text-align: right;">Page 62</p> <p>1 reference in the document and pull it 2 specifically. 3 Q. The Taher article -- strike 4 that. 5 You were provided the Taher 6 article after you completed your expert 7 report in this case, correct? 8 A. That's correct. 9 Q. So it's correct that it did 10 not inform your opinions in your report, 11 correct? 12 A. It informed my opinions -- 13 let me say that it added to my opinions 14 following the writing of my report. It 15 supported my position. 16 Q. Did the assessment conclude 17 that talc use causes ovarian cancer? 18 Strike that. Let me strike that 19 question. We'll come back to that. 20 (Document marked for 21 identification as Exhibit 22 Zelikoff-11.) 23 BY MR. HEGARTY: 24 Q. I'm going to mark next as</p>	<p style="text-align: right;">Page 64</p> <p>1 Q. Have you reviewed any 2 materials since completion of your report 3 for purposes of your work on this case 4 that we have not talked about this 5 morning? 6 A. I reviewed -- since my 7 report, I reviewed Dr. Pier's deposition. 8 Is that what you mean? 9 Q. Dr. Julie Pier's deposition? 10 A. Yes. Three-quarters of it. 11 It is a very long deposition. 12 Q. The second-to-last page of 13 Exhibit Number B under depositions makes 14 reference to depositions and exhibits of 15 Julie Pier dated 9/12 to 9/13/2018. 16 Do you see that? 17 A. Sorry, sir. Fifth line 18 down, deposition/exhibits of Julie Pier. 19 Q. Is that the deposition to 20 which you just referred? 21 A. To the best of my knowledge. 22 Q. Anything else that you have 23 reviewed for purposes of your work on 24 this case that we have not talked about</p>
<p style="text-align: right;">Page 63</p> <p>1 Exhibit Number 11 a copy of the Exhibit C 2 that's referenced in your report. 3 Did you prepare Exhibit 4 Number C? 5 A. If you mean by preparation, 6 did I write it, did I prepare the 7 summary, no, sir I did not. 8 Q. Do you know who prepared it? 9 A. From my reading, it appears 10 as though the attorneys may have prepared 11 it based upon -- to my knowledge, based 12 upon other deponents. 13 Q. Other than the documents 14 that we have talked about that are laid 15 out before us, did you bring any other 16 documents with you to the deposition? 17 A. Other than the documents 18 that are to my right in the folders, the 19 health assessment from the -- the 20 screening health assessment from Canada, 21 Dr. Taher's paper, a letter -- this is in 22 the documents to my right, a letter from 23 Luzenac to Dr. Al Wehner, my CV, the 24 expert report, Exhibit B, my CV, no, sir.</p>	<p style="text-align: right;">Page 65</p> <p>1 this morning or made reference to? 2 A. I reviewed Dr. Hopkins' 3 report. 4 Q. Let me ask it different. 5 Anything that you have reviewed that's 6 either not listed somewhere in your 7 report or we have not marked as an 8 exhibit? 9 A. To the best of my knowledge, 10 no. 11 Q. With regard to Exhibit C, 12 did you review all the documents that are 13 referenced in Exhibit Number C? 14 A. Can I see that, please. 15 Q. I think you still have a 16 copy in front of you. 17 A. Okay. 18 Q. It's Exhibit Number 11, 19 which is marked Exhibit -- which is 20 Exhibit C. Did you actually pull the 21 documents and confirm the accuracy of the 22 information -- 23 A. No, sir. 24 Q. -- contained in Exhibit C?</p>

<p style="text-align: right;">Page 66</p> <p>1 A. There are no -- there are no 2 references in here, as I understand it. 3 Q. Well, there are Bates 4 numbers -- 5 A. Bates numbers. 6 Q. -- that are listed at the 7 right, which correspond to documents, 8 correct? 9 A. Yes, but when I -- when I 10 hear references I think of citations, 11 papers. 12 Q. Did you actually pull the 13 documents whose Bates numbers are listed 14 and confirm the accuracy of the 15 information contained in Exhibit C? 16 A. I did not pull them as part 17 of reviewing this exhibit, but I have 18 looked at them, because I have gone 19 through all of the production documents. 20 Q. With regard to your expert 21 report in this case, is it correct that 22 you prepared that report -- strike that. 23 With regard to your expert 24 report it defines the scope of your</p>	<p style="text-align: right;">Page 68</p> <p>1 BY MR. HEGARTY: 2 Q. You agree that the standard 3 for proving biologic plausibility or any 4 other scientific issue in the medical 5 literature is the same one that applies 6 in litigation, correct? 7 MS. O'DELL: Object to the 8 form. If you know. 9 THE WITNESS: Can you repeat 10 that, please. 11 BY MR. HEGARTY: 12 Q. Sure. You agree that the 13 standard for proving biologic 14 plausibility or any other scientific 15 issue in a medical literature or in 16 science should be the same that is 17 applied in litigation? 18 MS. O'DELL: Object to the 19 form. 20 THE WITNESS: I will use the 21 same scrutiny and rigor, as I said 22 before. 23 BY MR. HEGARTY: 24 Q. You would -- you intend to</p>
<p style="text-align: right;">Page 67</p> <p>1 testimony in this case, correct? 2 MS. O'DELL: Objection to 3 form. 4 THE WITNESS: Yes, it does. 5 BY MR. HEGARTY: 6 Q. And is it correct that the 7 report was prepared with the same 8 methodology and approach as you would 9 have prepared an article for publication 10 in a scientific journal? 11 A. An article, a grant, a 12 review, an advisory board report, with 13 the same rigor and the same scrutiny, 14 yes. 15 Q. In other words, is it 16 correct that you prepared this report in 17 the same manner as you had prepared all 18 of your articles for publication? 19 MS. O'DELL: Asked and 20 answered. 21 THE WITNESS: I used the 22 same methodology, the same 23 scrutiny and the same rigor to 24 prepare this, yes.</p>	<p style="text-align: right;">Page 69</p> <p>1 apply the same standards to your report 2 and your opinions in this case as you 3 would apply if you were looking at this 4 as simply a professor at New York 5 University? 6 A. Well, I don't see simply a 7 professor. 8 If I were -- I review 9 papers. I think I've answered this 10 already. But I review papers and 11 literature with the same scrutiny as I 12 prepared this report. 13 Q. Did you apply the same 14 standard for assessing biologic 15 plausibility as you apply in your work at 16 NY University? 17 A. I do. 18 Q. Did you sign your report 19 dated November 16, 2018, with the same 20 intent as if signed under penalty of 21 perjury? 22 A. Could you repeat that 23 please. 24 Q. Sure. Did you sign your</p>

<p style="text-align: right;">Page 70</p> <p>1 expert report dated November 16, 2018, 2 with the same intent as if signed under 3 penalty of perjury? 4 MS. O'DELL: Object to form. 5 THE WITNESS: I'm not sure I 6 understand what that question 7 means. 8 BY MR. HEGARTY: 9 Q. Well, did you -- by signing 10 this report, did you confirm to the 11 accuracy of everything contained in the 12 report? 13 A. To the best of my knowledge, 14 I signed this report knowing that I 15 prepared this report and there is -- with 16 the same intent of accuracy and rigor. 17 Q. You understand this is 18 supposed to be your testimony as if on a 19 stand before a judge or a jury, correct? 20 MS. O'DELL: Object to the 21 form. 22 THE WITNESS: My 23 understanding of the deposition is 24 that it is a legal document and</p>	<p style="text-align: right;">Page 72</p> <p>1 that these are my -- my report 2 reflects my opinion. 3 BY MR. HEGARTY: 4 Q. Are they -- are there any 5 necessary changes, or revisions to your 6 report? 7 A. Not to my knowledge. 8 Q. And all the opinions that 9 you intend to offer in this litigation 10 are set out in your report, as you just 11 said, correct? 12 A. To come to my decision or my 13 opinion, prior to -- included all the 14 documents that I had in my possession and 15 were -- had access to prior to my report. 16 Q. My question is a little bit 17 different, Doctor. My question is, the 18 opinions that you intend to offer as you 19 just indicated, those are set out in your 20 report, correct? 21 A. The opinions that I intend 22 to offer, yes. 23 Q. As your report shows, you 24 don't intend to offer the opinion that</p>
<p style="text-align: right;">Page 71</p> <p>1 testifying my -- my opinion. And 2 that it has to be honest and 3 truthful and transparent. 4 BY MR. HEGARTY: 5 Q. Well, this time I'm talking 6 about your report. Do you understand 7 your report is supposed to be your 8 testimony as if you are before a judge 9 and a jury? 10 MS. O'DELL: Object to the 11 form. 12 THE WITNESS: I -- I 13 understand that this has to be 14 honest and truthful, and this will 15 be -- could be, will be, the basis 16 for my testimony in a court trial, 17 if that is what you're asking. 18 BY MR. HEGARTY: 19 Q. You understand it's supposed 20 to set out your -- the entirety of your 21 opinions in this case? 22 MS. O'DELL: Object to the 23 form. 24 THE WITNESS: I understand</p>	<p style="text-align: right;">Page 73</p> <p>1 use of Johnson's Baby Powder or Shower to 2 Shower causes ovarian cancer, correct? 3 A. My mission, the question 4 that I was asked by plaintiff attorney 5 was to confer or to assess biological 6 plausibility in the causation of talc for 7 ovarian cancer. 8 Q. And as your report shows, 9 you did not do a risk assessment or 10 Bradford Hill analysis of all the 11 literature looking at talc products and 12 ovarian cancer, correct? 13 A. I think I answered that, but 14 I'm not an epidemiologist, and my -- my 15 question was to look at biological 16 plausibility. 17 Q. And all the materials that 18 you intend to rely upon for purposes of 19 your opinions, are those set out in your 20 report, those we've talked about here 21 this morning, correct? 22 A. Yes, including the 23 contributions that were made after my 24 report including Dr. Longo's supplement,</p>

<p style="text-align: right;">Page 74</p> <p>1 including Dr. Saed's paper. They added 2 to my opinion, supplemented them. But it 3 is -- but my -- my opinion stays the same 4 as the report. 5 Q. Okay. 6 MR. HEGARTY: The next 7 section I have is pretty long. I 8 don't know if you want to take a 9 quick break now or just keep 10 going. It's up to you. 11 MS. O'DELL: We've been 12 going about an hour. I think 13 that's probably a good idea. 14 MR. HEGARTY: Because 15 otherwise it's not -- there's not 16 going to be a good break time. So 17 we should probably do it now. 18 MS. O'DELL: Well, we can 19 definitely do it now, but we'll -- 20 of course we'll break when the 21 witness needs to break. 22 MR. HEGARTY: Understood. 23 Understood. But you know what I 24 mean.</p>	<p style="text-align: right;">Page 76</p> <p>1 by more than one investigator, and is a 2 compilation of different points, then 3 I -- I will use -- I will not necessarily 4 put quotations around it. And I will not 5 necessarily reference it, because it's -- 6 may have been taken from another document 7 but it's common knowledge. 8 Q. What about -- 9 A. And it's -- 10 Q. I'm sorry. I didn't mean to 11 interrupt. 12 A. I couldn't -- I'm sorry. I 13 couldn't write it any better than as it 14 was put. 15 Q. What about if you take 16 materials from a published article for 17 purposes of your report, did you 18 reference those articles? 19 A. In some cases, not. Again, 20 it's my opinion that if there is 21 something that is stated by an 22 investigator and it's written extremely 23 well, and it's common knowledge for 24 scientists in that area, as well as</p>
<p style="text-align: right;">Page 75</p> <p>1 MS. O'DELL: Yeah. 2 THE VIDEOGRAPHER: Stand by 3 please. The time is 10:11 a.m. 4 Off the record. 5 (Short break.) 6 THE VIDEOGRAPHER: We are 7 back on the record. The time is 8 10:26 a.m. 9 BY MR. HEGARTY: 10 Q. Dr. Zelikoff, with regard to 11 your expert report, do you have that in 12 front of you? 13 A. I do now. Thank you. 14 Q. We marked that as exhibit 15 what? 16 A. Exhibit 2. 17 Q. With regard to Exhibit 18 Number 2, is it your testimony that all 19 of the sentences in your report are your 20 own words and not copied from others, 21 except where you used quotations? 22 A. Mm-hmm. The way I report 23 and write publications is if something 24 is, I feel, common knowledge or provided</p>	<p style="text-align: right;">Page 77</p> <p>1 others, then I will -- I will use it. 2 Q. That's not how you prepare 3 your report -- that's not how you prepare 4 your articles for journals though, 5 correct? 6 A. No, that's the same way I 7 prepare them. 8 If they are -- if they are, 9 again, common knowledge, I will not 10 necessarily cite them. 11 Q. Is it not your approach that 12 authors are to cite material to which 13 they are relying on or referring to in 14 published articles? 15 A. Again, I think you're asking 16 me the same question. But again, if 17 something is well known, then I do not 18 necessarily reference it. 19 Q. What is the definition -- 20 what is your definition of well known? 21 A. For example, if chromium -- 22 let's use nickel instead. If nickel is 23 being spoken about by IARC, by U.S. EPA, 24 by National Toxicology Program, and</p>



<p style="text-align: right;">Page 78</p> <p>1 they're all saying the same thing, I in 2 some cases may take what the IARC has 3 said and put it in my reference. 4 Q. And it's your testimony that 5 you do that in all -- you've done that in 6 all the articles that you've ever 7 published? 8 MS. O'DELL: Objection to 9 form. 10 THE WITNESS: I can't say 11 about all the articles. I 12 published over 130 -- 13 MR. HEGARTY: Mark -- 14 THE WITNESS: -- 15 publications and book chapters. 16 (Document marked for 17 identification as Exhibit 18 Zelikoff-12.) 19 BY MR. HEGARTY: 20 Q. Let me mark as Exhibit 21 Number 12 the academic integrity for 22 students at NYU policy. Is this the 23 policy applicable to your university? 24 A. It appears to be that you've</p>	<p style="text-align: right;">Page 80</p> <p>1 Q. Is that not -- is that a 2 definition you agree with? 3 A. I agree that there's ways to 4 interpret that. 5 Q. Is that -- is that the 6 definition New York University applies to 7 its students? 8 A. This sentence, "Presenting 9 others' work without adequate 10 acknowledgment of its source as though it 11 were one's own," that is for students. 12 That is not what I'm doing in my opinion. 13 In my opinion, I'm taking 14 common knowledge and presenting it. 15 Q. Well, they go on to give 16 examples of plagiarism that include, "A 17 sequence of words incorporated without 18 quotation marks." 19 Do you see where I'm 20 reading? 21 A. I do see it. "A sequence of 22 words incorporated without quotation 23 marks." 24 Q. It also says that,</p>
<p style="text-align: right;">Page 79</p> <p>1 taken it off the website in the academic 2 integrity for students at NYU. 3 Q. If you turn to the second 4 page, there is a definition of 5 plagiarism, that says, "Presenting 6 others' works without adequate 7 acknowledgment of its source as though it 8 were one's own." 9 A. I'm sorry. 10 Q. Do you agree with that 11 definition? 12 A. I'm sorry. What -- 13 Q. Second page of Exhibit 12. 14 A. You mean on the back? Is it 15 under Number 2, Number 1? 16 Q. Number 1. The definition of 17 plagiarism by your university for your 18 students is, "Presenting others' work 19 without adequate acknowledgement of its 20 source as though it were one's own." 21 Do you agree with that -- 22 that definition? 23 A. I agree that there's many 24 different ways to interpret that.</p>	<p style="text-align: right;">Page 81</p> <p>1 "Plagiarism is an unacknowledged passage 2 paraphrased from another's work." 3 Do you see that? 4 A. Some examples of plagiarism, 5 "Unacknowledged passage rephrased from 6 another's work." 7 Q. Do you agree those are -- 8 the two definitions that I just read from 9 your university's own policy for students 10 are examples of plagiarism? 11 A. This is the NYU 12 interpretation or what they've put on the 13 website, yes. 14 Q. Should this be a policy -- 15 strike that. 16 Is this a policy that 17 applies to students at NY university? 18 A. It applies -- it's an 19 academic integrity for students at NYU. 20 Q. Do you agree that professors 21 at NY university should also conform to 22 this policy? 23 A. I believe that honesty, 24 transparency is the key factor for all</p>

<p style="text-align: right;">Page 82</p> <p>1 scientists at any level. 2 Q. You would agree that this 3 should apply to your work as well, 4 correct? 5 A. I think that this definition 6 is open to interpretation. 7 Q. Well, do you either agree or 8 disagree that this -- well, strike that. 9 Do you agree that this 10 policy should be applied to your work in 11 this case? 12 A. I agree that plagiarism is 13 defined as presenting others' work 14 without adequate acknowledgment of its 15 source as though it were one's own. 16 That's the NYU policy for students. 17 Q. Did you -- you did that in 18 your own report, correct? 19 MS. O'DELL: Object to form. 20 THE WITNESS: I did what in 21 my own report? 22 BY MR. HEGARTY: 23 Q. You plagiarized portions of 24 other people's work without proper</p>	<p style="text-align: right;">Page 84</p> <p>1 Q. Do you know who Shawn Levy 2 is? 3 A. I do not. 4 Q. Did you review Dr. Levy's 5 report for purposes of your -- preparing 6 your report in this case? 7 A. I actually looked at it, but 8 did not -- did not read it. 9 Q. When did you have a chance 10 to look at his expert report? 11 A. I have looked at it -- I'm 12 trying to gather the knowledge. I 13 actually do not recall when I looked at 14 it. 15 Q. If you look at your report 16 on Page 20. In that exhibit, Doctor. 17 A. Oh okay. 18 Q. Your report and the portion 19 of Dr. Levy's report is attached, and if 20 you look at your report Page 20 and his 21 report Page 5 -- 22 MS. O'DELL: I think, Mark, 23 I think there's confusion because 24 there's two documents put together</p>
<p style="text-align: right;">Page 83</p> <p>1 acknowledgment, correct? 2 MS. O'DELL: Objection to 3 form. 4 THE WITNESS: That is 5 totally incorrect. 6 I used sentences from other 7 people's -- other people's papers 8 because they were common knowledge 9 and contributed by multiple 10 authors. And it was -- 11 BY MR. HEGARTY: 12 Q. I'm going to mark -- sorry. 13 A. And it was stated in a way 14 that I couldn't have stated better. 15 Q. I'm going to mark as 16 Exhibit 13 a report -- a portion of your 17 report dated November 16, 2018. And the 18 back of that is a portion of Rule 26 19 expert report of an expert by the name of 20 Shawn Levy. 21 (Document marked for 22 identification as Exhibit 23 Zelikoff-13.) 24 BY MR. HEGARTY:</p>	<p style="text-align: right;">Page 85</p> <p>1 in this -- 2 MR. HEGARTY: Right. One is 3 her report and one is Levy's 4 report. 5 MS. O'DELL: I just think 6 that that was the confusion. 7 THE WITNESS: Thank you. 8 BY MR. HEGARTY: 9 Q. So the -- do you see that 10 sentences marked as 1 and 2 from 11 Dr. Levy's report are identical to 12 sentences marked 1 and 2 in your report? 13 MS. O'DELL: Object to form. 14 And, Doctor, if you need to 15 take the documents apart and 16 compare them, rather than flipping 17 back and forth, if that would be 18 helpful to you, feel free to do 19 that. 20 THE WITNESS: Good idea. I 21 actually don't recall. Could 22 you -- could you tell me when my 23 report is dated please? 24 BY MR. HEGARTY:</p>

<p style="text-align: right;">Page 86</p> <p>1 Q. November 16. His report is 2 also dated November 16. 3 A. I did not actually see this 4 report until after mine. 5 However, let me address your 6 question to the best of my ability. 7 "Things stated as both 8 inherited and acquired gene mutations 9 work together to cause cancer." 10 Everyone from the time of 11 their scientific career back in college 12 knows that. 13 "While genetic testing" -- 14 let me make sure I have both -- "both 15 inherited and acquired gene mutations 16 work together to cause cancer." 17 How -- there is no way for 18 me to say that differently. This is a 19 very well statement, very well put 20 statement. I used it without a 21 reference. Even if one -- 22 Q. My question -- I'm sorry. I 23 thought you were finished. 24 A. "Even if one has inherited a</p>	<p style="text-align: right;">Page 88</p> <p>1 from either Dr. Levy's report or from 2 somewhere -- some other source? 3 A. The thoughts are the same. 4 The words seem to be identical. And 5 again, if you interpret that one way and 6 I interpret it another, I certainly do 7 not interpret it as plagiarism. 8 Q. Let me show you another 9 example. 10 (Document marked for 11 identification as Exhibit 12 Zelikoff-14.) 13 BY MR. HEGARTY: 14 Q. I'm going to mark as 15 Exhibit 14, again a portion of your 16 report Page 12 and a portion of a report 17 by Rebecca Smith-Bindman. Do you know 18 who that is? 19 A. Not at all. 20 Q. Did you see her report in 21 this case before preparing your report? 22 A. I never looked at her 23 report. 24 Q. If you would look at the two</p>
<p style="text-align: right;">Page 87</p> <p>1 genetic mutation that predisposes one's 2 chances, doesn't mean he or she has to 3 get cancer." Again, common knowledge 4 from everyone. 5 Q. Well, Dr. Zelikoff, my 6 question is different than that. 7 My question is, can you 8 explain to us here today, given that you 9 did not see Dr. Levy's report until after 10 you completed your report, how you have 11 several identical sentences between your 12 report and Dr. Levy's report? 13 MS. O'DELL: Object to the 14 form. 15 BY MR. HEGARTY: 16 Q. Dr. Levy's report. 17 A. I cannot -- I -- I don't 18 know. The only -- what I can say is that 19 there was likely a publication. But that 20 is speculation, because I have not looked 21 that over. 22 Q. But is it your testimony 23 here today that the words in your report 24 were solely your own words and not taken</p>	<p style="text-align: right;">Page 89</p> <p>1 reports side by side under the 2 definition -- under the heading 3 Fragrances -- 4 A. I'm sorry, I don't have her 5 report. 6 Q. You have one page of her 7 report in that exhibit. You have the -- 8 the front page and the one page of her 9 report, and you have Page 12 of your 10 report, correct? 11 A. I see. Correct. 12 Q. Do you see that the section 13 under the heading Fragrances is identical 14 between the two reports? 15 A. Yes. They are identical 16 wording. 17 Q. And none of those sentences 18 are common knowledge, correct? 19 MS. O'DELL: Object to the 20 form. 21 THE WITNESS: It's a 22 statement. 23 BY MR. HEGARTY: 24 Q. But it's not common</p>



<p style="text-align: right;">Page 90</p> <p>1 knowledge, correct, Doctor?</p> <p>2 A. But it's a -- it is -- there</p> <p>3 are more than 150 different chemicals</p> <p>4 added to Johnson's Baby Powder and Shower</p> <p>5 to Shower products. I reviewed the</p> <p>6 expert report from Dr. Crowley that</p> <p>7 concludes that some of these chemicals</p> <p>8 may contribute to the inflammatory</p> <p>9 response, toxicity, and potential</p> <p>10 carcinogenicity. I concur with his</p> <p>11 opinion.</p> <p>12 I say the same thing as</p> <p>13 Dr. Smith-Bindman.</p> <p>14 Q. Is it your testimony that</p> <p>15 you and Dr. Smith-Bindman came to the</p> <p>16 exact same words just by coincidence?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 THE WITNESS: We came to the</p> <p>20 same conclusions.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. That's not my question. My</p> <p>23 question is, is it your testimony here</p> <p>24 today that you and Dr. Smith-Bindman came</p>	<p style="text-align: right;">Page 92</p> <p>1 Q. Sure. Is it your testimony</p> <p>2 that the words in your report under</p> <p>3 section -- under the section Fragrances</p> <p>4 are your words and your words alone from</p> <p>5 no other source?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 THE WITNESS: I don't quite</p> <p>9 understand what you mean by no</p> <p>10 other source.</p> <p>11 These are my words. They</p> <p>12 confer my opinion.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Well, did you copy those</p> <p>15 words from some source besides</p> <p>16 Smith-Bindman's report?</p> <p>17 A. I did not copy words. I --</p> <p>18 I don't know how this happened.</p> <p>19 If I was in error, I own</p> <p>20 that responsibility.</p> <p>21 (Document marked for</p> <p>22 identification as Exhibit</p> <p>23 Zelikoff-15.)</p> <p>24 BY MR. HEGARTY:</p>
<p style="text-align: right;">Page 91</p> <p>1 to the exact -- to say the exact same</p> <p>2 thing under the section Fragrance simply</p> <p>3 by coincidence?</p> <p>4 MS. O'DELL: Objection to</p> <p>5 form.</p> <p>6 THE WITNESS: I don't do</p> <p>7 anything usually by coincidence.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. Okay. Is it your testimony</p> <p>10 that the words that you wrote under the</p> <p>11 section Fragrances on Page 12 are your</p> <p>12 words and came from nowhere else?</p> <p>13 A. I don't quite understand</p> <p>14 where they could have come from because I</p> <p>15 did not review her report.</p> <p>16 Q. Is it your testimony that</p> <p>17 the words in your report under the</p> <p>18 section Fragrances are your words and</p> <p>19 your words alone from no other source?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 THE WITNESS: Could you</p> <p>23 please repeat the question?</p> <p>24 BY MR. HEGARTY:</p>	<p style="text-align: right;">Page 93</p> <p>1 Q. I'm going to show you what</p> <p>2 I'm next marking as Exhibit 15.</p> <p>3 MS. O'DELL: Is this one</p> <p>4 exhibit?</p> <p>5 MR. HEGARTY: That's one</p> <p>6 exhibit.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Doctor, Exhibit Number 15 is</p> <p>9 again a portion of your report, and also</p> <p>10 attached to it is a reference from</p> <p>11 Genetics Home Reference dated June 27,</p> <p>12 2017. Do you see both documents?</p> <p>13 A. I do see both documents.</p> <p>14 Q. We have highlighted and</p> <p>15 numbered in Exhibit 15 the portions from</p> <p>16 your report which are taken word for word</p> <p>17 from Genetics Home Reference without a</p> <p>18 single reference to that authority</p> <p>19 anywhere in your report, including in the</p> <p>20 materials considered or reviewed.</p> <p>21 MS. O'DELL: Objection.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Do you see that?</p> <p>24 MS. O'DELL: Objection to</p>

<p style="text-align: right;">Page 94</p> <p>1 form.</p> <p>2 And -- and, Doctor, take a</p> <p>3 moment to review both, because the</p> <p>4 way this is put together is a</p> <p>5 little confusing.</p> <p>6 THE WITNESS: I see what</p> <p>7 you're referring to.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. And did you copy, for</p> <p>10 purposes of your report, without citation</p> <p>11 to this authority, the words that we've</p> <p>12 identified from this reference to Genetic</p> <p>13 Home Reference?</p> <p>14 MS. O'DELL: Objection to</p> <p>15 the form.</p> <p>16 THE WITNESS: So when you</p> <p>17 have things like, "Inherited</p> <p>18 mutations are passed down from</p> <p>19 parent to child and are present</p> <p>20 throughout a person's life in</p> <p>21 virtually in every cell of the</p> <p>22 body." Biology 101, basically,</p> <p>23 where that came from.</p> <p>24 "These mutations are called</p>	<p style="text-align: right;">Page 96</p> <p>1 your report in this case?</p> <p>2 A. I may have used -- it</p> <p>3 appears that I have used the same words.</p> <p>4 And if I did that, which it</p> <p>5 appears that I have, then I've done it</p> <p>6 with the intent to get those same points</p> <p>7 across.</p> <p>8 Q. But you do agree that you</p> <p>9 have included in your report a sequence</p> <p>10 of words incorporated from another source</p> <p>11 without quotation marks, correct?</p> <p>12 MS. O'DELL: Objection to</p> <p>13 form.</p> <p>14 THE WITNESS: I don't use --</p> <p>15 I don't usually use quotation</p> <p>16 marks.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. Well, you have used other</p> <p>19 people's words without acknowledging</p> <p>20 where they came from, correct?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 THE WITNESS: I could have</p> <p>24 used quotation marks. And if I</p>
<p style="text-align: right;">Page 95</p> <p>1 germ line mutations because</p> <p>2 they're present in the parents'</p> <p>3 egg or sperm, a germ cell."</p> <p>4 Yes, some of these sentences</p> <p>5 appear to be the same as what is</p> <p>6 in here.</p> <p>7 However, again, I stand on</p> <p>8 the fact that all of these -- all</p> <p>9 of my statements are common</p> <p>10 knowledge that have come from</p> <p>11 numerous references. Although the</p> <p>12 words may be the same, the</p> <p>13 thoughts are -- are said as well</p> <p>14 as they can be said.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Dr. Zelikoff, have you ever</p> <p>17 seen this reference to Genetic Home</p> <p>18 Reference before right now?</p> <p>19 A. Not to my knowledge.</p> <p>20 Q. So is it your testimony that</p> <p>21 you did not copy the words from Genetic</p> <p>22 Home Reference that we have highlighted</p> <p>23 that correspond by number to the portions</p> <p>24 in your report for purposes of preparing</p>	<p style="text-align: right;">Page 97</p> <p>1 were to do this over, I would use</p> <p>2 quotation marks.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. You're not telling us,</p> <p>5 Doctor, that if you prepared an article</p> <p>6 for publication in a journal, that you</p> <p>7 would take references from another source</p> <p>8 like Genetic Home Reference, include them</p> <p>9 in the article, verbatim, not use</p> <p>10 quotation marks and not reference that</p> <p>11 cite. Is that what you're saying?</p> <p>12 MS. O'DELL: Objection to</p> <p>13 form.</p> <p>14 THE WITNESS: I'm standing</p> <p>15 on my interpretation, and that is</p> <p>16 that in a reference that I would</p> <p>17 prepare in a publication, it would</p> <p>18 be accepted for peer review if</p> <p>19 there was something that I felt</p> <p>20 was common knowledge, that I would</p> <p>21 not reference it.</p> <p>22 To your point, if I had to</p> <p>23 do this over, I would have put</p> <p>24 quotation marks around this.</p>

<p style="text-align: right;">Page 98</p> <p>1 BY MR. HEGARTY: 2 Q. You would have cited to the 3 authority, as well, from which that -- 4 those passages were lifted, correct? 5 MS. O'DELL: Objection to 6 form. 7 THE WITNESS: I certainly 8 could if that was a concern from 9 the journal or from the reviewer, 10 then I would definitely put in the 11 reference. 12 BY MR. HEGARTY: 13 Q. If a student had prepared 14 this, and you became aware that the 15 student had lifted portions from Genetic 16 Home Reference without any citation, 17 without acknowledging where it came from, 18 would that be okay with you? 19 MS. O'DELL: Objection to 20 form. 21 THE WITNESS: There are -- 22 this is a large document. And in 23 order for something to be copied 24 or, as you put it, plagiarized,</p>	<p style="text-align: right;">Page 100</p> <p>1 will not -- this is the -- what 2 you gave me was an interpretation, 3 was NYU policy, an interpretation 4 of that, which is not the same as 5 mine. 6 BY MR. HEGARTY: 7 Q. Well, you do agree, though, 8 that between the -- your report, the 9 portions taken from your report and the 10 Genetic Home Reference reference are 11 identical? 12 MS. O'DELL: Object to the 13 form. 14 THE WITNESS: I agree that 15 there are sentences that are 16 identical. Yes. 17 BY MR. HEGARTY: 18 Q. You did not acknowledge that 19 source anywhere in your report, correct? 20 A. If you say so. 21 Q. Do you think that's okay to 22 do that? 23 MS. O'DELL: Objection to 24 form.</p>
<p style="text-align: right;">Page 99</p> <p>1 there has to be a certain amount 2 or percentage of the document that 3 has to be the same. 4 And this document, my 5 report, is quite large. So if a 6 student prepared this, and their 7 term paper, for example, was 50 8 pages, I would let them know that 9 if prepared the next time they 10 might want to put in a reference. 11 But I would have to look at 12 the entire size of the document 13 and the percentage of it which had 14 similar -- similar statements and 15 sentences. 16 BY MR. HEGARTY: 17 Q. You do agree that under the 18 policy we marked, we're talking about 19 what you did with regard to this Genetics 20 Home Reference cite, meets the definition 21 of plagiarism? 22 MS. O'DELL: Objection to 23 form. 24 THE WITNESS: I certainly</p>	<p style="text-align: right;">Page 101</p> <p>1 THE WITNESS: If I had not 2 thought it was okay, I would not 3 have done it. 4 BY MR. HEGARTY: 5 Q. Would that -- would that be 6 acceptable for purposes of publishing 7 your report? 8 MS. O'DELL: Objection to 9 the form. 10 THE WITNESS: My opinion 11 stands. And that is my 12 interpretation of what is okay to 13 do based on common knowledge and 14 multiple sources, stands the same. 15 BY MR. HEGARTY: 16 Q. If you were to publish your 17 report, as it is, would you go back and 18 use quotation marks and cite the 19 reference that we just looked at -- 20 A. If I had -- 21 Q. -- Exhibit Number 16? 22 MS. O'DELL: Excuse me, 23 Doctor. Just let him finish. 24 THE WITNESS: Of course.</p>

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1 I'm sorry.  
2 MS. O'DELL: Thank you. And  
3 just give me a moment to object.  
4 Thank you.  
5 BY MR. HEGARTY:  
6 Q. Did you hear my question?  
7 A. Could you repeat your  
8 question, please?  
9 Q. Sure. If you were to  
10 publish a report as it is, would you go  
11 back and use quotation marks and cite the  
12 reference that we just looked at in  
13 Exhibit Number 16?  
14 A. Now that you've pointed out  
15 your interpretation of it, I would  
16 certainly consider that.  
17 (Document marked for  
18 identification as Exhibit  
19 Zelikoff-16.)  
20 BY MR. HEGARTY:  
21 Q. Let me show you what I'm  
22 next marking as Exhibit Number 16.  
23 MS. O'DELL: I'll reach  
24 over, instead of you throwing it.

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1 increased release of ROS."  
2 That is a very common --  
3 commonly known point.  
4 BY MR. HEGARTY:  
5 Q. How about Point Number 4 in  
6 the abstract?  
7 A. As --  
8 Q. That's -- is it your  
9 testimony that Point Number 4 in the  
10 abstract is what you consider common  
11 knowledge?  
12 A. "Activation of the  
13 transcription factors can lead to the  
14 expression of over 500 genes, including  
15 more for growth factors." And I'm going  
16 to read the entire abstract.  
17 Actually this is a review  
18 paper. And this is not a unique finding  
19 to this particular author.  
20 And thus "Activation of  
21 transcription factors," again as I read,  
22 is an outcome of many, many authors. And  
23 as I said, is a review paper, not a  
24 unique investigator-initiated outcome.

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1 BY MR. HEGARTY:  
2 Q. This is another portion of  
3 your report which we've correspondingly  
4 referenced to an article by Simone  
5 Reuter. And you can see where we've  
6 identified six different times where  
7 sentences have been copied verbatim from  
8 this article without any quotation or any  
9 acknowledgment of its -- of the source.  
10 Do you see that?  
11 MS. O'DELL: Object --  
12 excuse me. Object to the form.  
13 Feel free to review it, the  
14 reference or the exhibit. There  
15 are two things paper clipped  
16 together, if you need to look at  
17 it in more detail.  
18 THE WITNESS: Again, there  
19 are sentences such as, "During  
20 inflammation macrophages, mast  
21 cells, and neutrophils were  
22 recruited at the site of damage,  
23 leads to a respiratory burst and  
24 increased uptake of oxygen, and an

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1 Q. You keep referring to common  
2 knowledge. Who is -- who has this common  
3 knowledge?  
4 A. People who read scientific  
5 journals.  
6 Q. So is it your testimony that  
7 someone who would read your report would  
8 understand that that is not -- those are  
9 not your words but taken from  
10 somewhere -- somewhere else?  
11 MS. O'DELL: Object to the  
12 form.  
13 THE WITNESS: It would  
14 depend upon who is reading it.  
15 BY MR. HEGARTY:  
16 Q. Can you cite for me any  
17 publication that you have ever written  
18 where you have cited another authority  
19 word for word and did not use quotation  
20 marks and did not reference that  
21 authority?  
22 A. Not off the top of my head.  
23 Q. But you did do that in your  
24 expert report in this case, correct?

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1 MS. O'DELL: Object to the  
2 form.  
3 THE WITNESS: It appears  
4 from what you're showing me, that  
5 in my interpretation of common  
6 knowledge and multiple -- multiple  
7 investigators, I have done that,  
8 yes.  
9 (Document marked for  
10 identification as Exhibit  
11 Zelikoff-17.)  
12 BY MR. HEGARTY:  
13 Q. I'm going to mark next  
14 Exhibit Number 17, another portion of  
15 your report where you, again, take  
16 sentences from a publication called  
17 EnvironmentalChemistry.com.  
18 You cite them word for word  
19 in your report and you make no reference  
20 anywhere in your report to this  
21 authority.  
22 A. I said --  
23 MS. O'DELL: Excuse me.  
24 Excuse Me, Doctor. Excuse me.

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1 MR. HEGARTY: I'm not  
2 finished with my question.  
3 MS. O'DELL: I thought you  
4 were finished with your question.  
5 MR. HEGARTY: Because I just  
6 made a statement.  
7 MS. O'DELL: Well, I object  
8 to the statement. You ask your  
9 question, and I'll probably object  
10 to that.  
11 But give me a chance, the  
12 two of you, please.  
13 BY MR. HEGARTY:  
14 Q. Let me -- Doctor, this --  
15 the reference that we have here in the  
16 Exhibit Number 17 is to a website called  
17 EnvironmentalChemistry.com. Did you  
18 review this website in preparing your  
19 report?  
20 A. I don't recall.  
21 Q. Do you see where we make  
22 reference to five different places where  
23 you copied word for word from  
24 EnvironmentalChemistry.com?

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1 MS. O'DELL: Object to the  
2 form.  
3 THE WITNESS: Yes, I see  
4 what you're saying.  
5 BY MR. HEGARTY:  
6 Q. And nowhere in your report  
7 do you give acknowledgment to  
8 EnvironmentalChemistry.com as a source of  
9 the information that you copied, correct?  
10 MS. O'DELL: Object to the  
11 form.  
12 THE WITNESS: I do say the  
13 U.S. EPA defines asbestos by  
14 limiting the term to six specific  
15 fibrous minerals from two distinct  
16 groups. And I go on from there.  
17 That is a referral to the U.S.  
18 EPA.  
19 BY MR. HEGARTY:  
20 Q. Doctor, nowhere in your  
21 report, in those notebooks or anywhere do  
22 you cite to EnvironmentalChemistry.com,  
23 do you?  
24 MS. O'DELL: Object. Object

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1 to the form.  
2 THE WITNESS: Not to my  
3 knowledge.  
4 EnvironmentalChemistry.com, I  
5 don't even recall reviewing it.  
6 BY MR. HEGARTY:  
7 Q. But don't you agree that you  
8 would have had to review it based on the  
9 fact that there are identical sentences  
10 taken from -- that are identical  
11 sentences, in Environmental Chemistry and  
12 in your report?  
13 MS. O'DELL: Object to the  
14 form.  
15 THE WITNESS: This -- again,  
16 this information is common  
17 knowledge. This is not a creation  
18 of EnvironmentalChemistry.com.  
19 They are not an individual  
20 investigator finding this data.  
21 They are reporting this data on  
22 the internet for people's review.  
23 BY MR. HEGARTY:  
24 Q. Is



<p style="text-align: right;">Page 110</p> <p>1 EnvironmentalChemistry.com a reliable 2 authority? 3 MS. O'DELL: Object to the 4 form. 5 THE WITNESS: I have no 6 idea -- sorry. 7 MS. O'DELL: Go ahead. 8 THE WITNESS: I have no idea 9 of the impact factor or the 10 reliability of this. However, in 11 talking about this, and saying the 12 things that I -- that you have 13 said I have used identically, 14 which appear to be the case -- 15 "while amphibole and serpentine 16 asbestos may have fibrous habits, 17 they have very different forms. 18 Amphibole are double-chain 19 silicates." 20 This is known in the 21 asbestos -- in the asbestos 22 literature. And the basic 23 structural unit is silicone oxide. 24 This is not Environmental</p>	<p style="text-align: right;">Page 112</p> <p>1 published methodology which says that 2 your interpretation of what you are to 3 quote and what you are to cite in an 4 article is an accepted methodology in 5 publishing scientific literature? 6 A. It's my professional opinion 7 after 30 years of work. 8 Q. Well, can you cite for me 9 any published authority that says your 10 definition of what you are to cite and 11 what you are to reference is the 12 definition that's applicable to medical 13 literature? 14 MS. O'DELL: Objection to 15 form. 16 THE WITNESS: I have never 17 been accused or cited by any 18 publication in any of my 135 19 papers or my over 30 book chapters 20 of having anything that was of a 21 dubious nature, ever. 22 BY MR. HEGARTY: 23 Q. That's not my question. My 24 question was can you cite for me any</p>
<p style="text-align: right;">Page 111</p> <p>1 Chemistry's individual 2 investigator initiated. 3 I think you may be confusing 4 an individual paper where an 5 investigator sits down in the 6 laboratory and works out or comes 7 up with a fact and that it's his. 8 As opposed to data that's just out 9 there in the internet, out there 10 in the world, out there in book 11 chapters, out there everywhere, 12 that people know. 13 This is not an investigator 14 initiated, whether it's 15 EnvironmentalChemistry.com. 16 So I will -- I will say to 17 you that in many cases, I did use 18 the same sentence. Certainly 19 EnvironmentalChemistry.com is not 20 an investigator-initiated point of 21 reference. It's just facts that 22 are supported by other experts. 23 BY MR. HEGARTY: 24 Q. Can you cite for me any</p>	<p style="text-align: right;">Page 113</p> <p>1 written authority that says that in 2 publishing medical literature, if you're 3 citing what you call general knowledge 4 word for word from another source, you 5 don't have to quote it and you do not 6 have to give it any reference. 7 A. Just my professional opinion 8 of 30 years of work. 9 Q. Okay. And in a -- and 10 you've never done that in any medical 11 article you -- any article you have 12 published, correct? 13 A. I cannot -- I cannot speak 14 to all. 15 Q. Well, if you were to write a 16 medical article -- a scientific article 17 today, and you were to quote something 18 from -- take something word for word from 19 EnvironmentalChemistry.com, is it your 20 testimony you wouldn't give any reference 21 to it or wouldn't use quotation marks? 22 MS. O'DELL: Object to the 23 form. 24 THE WITNESS: I -- I stand</p>

<p style="text-align: right;">Page 114</p> <p>1 on the opinion that I have, that 2 it would be common knowledge. 3 BY MR. HEGARTY: 4 Q. That's not my question. My 5 question is if you were to write an 6 article today and you were to cite 7 Environmental.com word for word, is it 8 your testimony you would not quote 9 that -- those words or give any reference 10 or acknowledgment to environmental -- 11 to -- 12 A. EnvironmentalChemistry.com. 13 Q. EnvironmentalChemistry.com? 14 MS. O'DELL: Object to the 15 form. 16 THE WITNESS: I would do the 17 same thing I've done for this 18 report. 19 BY MR. HEGARTY: 20 Q. Okay. And is that true for 21 every resource that we've looked at so 22 far? You would -- if you were to write a 23 scientific journal today, you would -- 24 and quoted from all those resources, you</p>	<p style="text-align: right;">Page 116</p> <p>1 that you have copied verbatim from that 2 publication without giving any 3 acknowledgment to Dr. Rakoff-Nahoum or 4 use any quotation marks. Do you see 5 that? 6 MS. O'DELL: Object to the 7 form. 8 THE WITNESS: So on Page 124 9 of the review by Seth 10 Rakoff-Nahoum -- Nahoum, if you 11 look on -- under cancer and 12 inflammation, and one of the 13 points that you make here -- and 14 by the way, this is a review 15 paper, again not an independent 16 investigator-initiated data from 17 the laboratory -- "Epidemiological 18 evidence points to a connection 19 between inflammation and" -- "and 20 predisposition for the development 21 of cancer, i.e., long-term 22 inflammation leads to the 23 development of dysplasia," there's 24 no reference there.</p>
<p style="text-align: right;">Page 115</p> <p>1 would not use quotation marks and you 2 would not give any acknowledgment in 3 any -- if you were to write a scientific 4 article today? 5 MS. O'DELL: Object to form. 6 Misstates her testimony. 7 THE WITNESS: I -- I did say 8 that there are certain cases that 9 if I had to do it over and based 10 upon your rigorous opinion of 11 this, that I would place quotation 12 marks or add a reference, yes. 13 (Document marked for 14 identification as Exhibit 15 Zelikoff-18.) 16 BY MR. HEGARTY: 17 Q. I'm going to show you what 18 I'm next marking as Exhibit 18. 19 This is another portion of 20 your report. In addition to that 21 exhibit -- or with that exhibit is a 22 reference to a publication by 23 Rakoff-Nahoum, where you again made 24 references to four different sentences</p>	<p style="text-align: right;">Page 117</p> <p>1 So this author also, 2 Dr. Rakoff-Nahoum -- sorry, I'm 3 murdering his name -- also gives 4 no reference to that. 5 Again, in this case, using 6 my analogy of something that has 7 been gathered by numerous other 8 investigators and is common 9 knowledge to the -- to the 10 scientific population, he did also 11 not use a reference. And I did 12 not use a reference. 13 BY MR. HEGARTY: 14 Q. But if -- but if you look at 15 his -- the last reference, Number 4, he 16 does acknowledge a resource for all of 17 those statements, Resource 20 in the 18 publication, correct? 19 MS. O'DELL: Objection. 20 Could you provide, if you're 21 going to use this exhibit, provide 22 the full manuscript that 23 identifies Resource 20. 24 (Document marked for</p>

<p style="text-align: right;">Page 118</p> <p>1 identification as Exhibit 2 Zelikoff-20.) 3 BY MR. HEGARTY: 4 Q. I'll mark as 20, the 5 entirety of the Rakoff-Nahoum article, 6 which does include 20, which is a 7 reference to Hussain, "Radical Causes of 8 Cancer." 9 A. Citation 20 in Exhibit 20 is 10 also a review paper, and none of these 11 references are going back to the 12 independent investigator who actually 13 said this. 14 So these are reviewed in. 15 Again, standing by my opinion that 16 oftentimes in review articles which -- 17 in -- in review articles, they often take 18 the liberty, as seen in your first point, 19 that you do not use a reference. 20 Now, I would have to read 21 Reference 20 in order to see whether 22 that, in fact, reviews Points 2, 3 and 4 23 in your "Why Cancer and Inflammation" 24 paper.</p>	<p style="text-align: right;">Page 120</p> <p>1 publication by OSHA for purposes of your 2 report. Do you see that? 3 MS. O'DELL: Objection to 4 form. 5 THE WITNESS: I do see what 6 you're pointing to. I also will 7 tell you that Point 1 that you 8 point out in the OSHA United 9 States Department of Labor, on 10 hexavalent chromium, which is off 11 the internet, adverse health 12 effects associated, yes, I used 13 adverse health -- health effects 14 other than cancer, and then I had 15 these different words. 16 I'm just explaining what I 17 see. 18 With chromium-6, hexavalent 19 chromium exposure include 20 occupational asthma, eye 21 irritation and damage, perforated 22 ear drums, et cetera, et cetera. 23 This can be found in numerous, 24 numerous references. This again</p>
<p style="text-align: right;">Page 119</p> <p>1 I do not know that 2 Reference 20 actually reviews all of 3 these points and are the reference. 4 Also, many of these 5 points -- and again, another review 6 paper. 7 Many of these points, the 8 chronic inflammatory states associated 9 with infection, irritation, may lead to 10 environments that foster genomic lesions 11 in tumor initiation, no reference there. 12 One effect and mechanism, et 13 cetera, et cetera. Hydroxyl radicals, 14 reactive oxygen species, no reference 15 there. No quotation marks. 16 So I don't know whether he, 17 in fact, uses the same logic that I did. 18 (Document marked for 19 identification as Exhibit 20 Zelikoff-19.) 21 BY MR. HEGARTY: 22 Q. I'm going to show you 23 Exhibit 19. This is another reference 24 where you copied portions of a</p>	<p style="text-align: right;">Page 121</p> <p>1 is common knowledge for anyone 2 doing chromium -- chromium 3 studies. 4 Again, did I use the same 5 words? In many cases, I did here. 6 "Can also develop an 7 allergic skin reaction called 8 allergic contact dermatitis." I'm 9 not quite sure how else you can 10 say that, that phrase. 11 So I still feel confident in 12 what I did was based upon my 13 professional judgment. 14 (Document marked for 15 identification as Exhibit 16 Zelikoff-21.) 17 BY MR. HEGARTY: 18 Q. Okay. I'll show you what I 19 next marked as Exhibit 21. Exhibit 21 is 20 again a portion of your report where we 21 have identified statements that are taken 22 verbatim without acknowledgment from the 23 publication attached thereto by Kasprzak. 24 A. Kasprzak. I'm sorry, sir.</p>



<p style="text-align: right;">Page 122</p> <p>1 MS. O'DELL: Did you finish 2 your question? 3 BY MR. HEGARTY: 4 Q. No. Do you see where I'm 5 talk -- do you see where I'm referencing? 6 MS. O'DELL: Object to form. 7 THE WITNESS: I -- 8 MS. O'DELL: Take a moment 9 if you need to, Doctor. 10 THE WITNESS: So what I see 11 in the abstract of a paper, a 12 review paper called Nickel 13 Carcinogenesis by Kasprzak and 14 Sunderman and Konstantine 15 Salnikow, you say -- you're 16 pointing to, "The exact mechanisms 17 of nickel-induced carcinogenesis 18 are not known and have been 19 subject of numerous 20 epidemiological and experimental 21 investigations." 22 That is not -- that -- okay. 23 And what's in my paper is, "The 24 exact mechanisms of nickel-induced</p>	<p style="text-align: right;">Page 124</p> <p>1 risks are primarily related to 2 exposure to soluble nickel 3 concentrations," et cetera, et 4 cetera. 5 But in many cases throughout 6 this reference, I can also -- it 7 being a review paper, I can also 8 tell you there's epidemiological 9 evidence on possible cancer risk 10 from general environment and 11 dietary nickel exposures not cited 12 as a reference, not quoted. 13 BY MR. HEGARTY: 14 Q. Are you finished? 15 A. I am, thank you. 16 THE WITNESS: Excuse me. 17 May I just point out that it's 18 getting even colder in here and 19 I'm a bit uncomfortable. 20 (Whereupon, a discussion was 21 held off the record.) 22 THE WITNESS: May I go get 23 my scarf? 24 MR. HEGARTY: Off the</p>
<p style="text-align: right;">Page 123</p> <p>1 cainogenesis are not known but 2 likely involve genetic and 3 epigenetic routes." 4 That's not the same as this 5 sentence. It has portions of the 6 same, but not the entire sentence 7 is the same. 8 "Are likely to evolve 9 genetic and epigenetic routes." 10 Not quite sure how else you would 11 say this. 12 And this again is a review 13 paper. And going through it, here 14 I can cite a sentence. 15 "Occupational exposure to nickel 16 occurs predominately in mining, 17 refining, alloy production, 18 electroplating, and welding." 19 This is in the review by Kasprzak. 20 There's no reference there either. 21 In this sentence, "In 1990 22 the International Committee on 23 Nickel Carcinogenesis in Man 24 suggested that respiratory cancer</p>	<p style="text-align: right;">Page 125</p> <p>1 record. 2 THE VIDEOGRAPHER: The time 3 is 11:11 a.m. Off the record. 4 (Short break.) 5 THE VIDEOGRAPHER: The time 6 is 11:23 a.m. Back on record. 7 (Documents marked for 8 identification as Exhibits 9 Zelikoff-25 through 32.) 10 MR. HEGARTY: We're back on 11 the record. I'm going to mark -- 12 I've marked as Exhibits 25 through 13 32, other examples taken from 14 Dr. Zelikoff's report where -- 15 along with the references to which 16 they were taken. And I'm just 17 going to mark those for purposes 18 of the deposition as those 19 exhibits. 20 MS. O'DELL: What's the 21 exhibit number? 22 MR. HEGARTY: Exhibits 25 23 through 32, and I did skip over 24 through 22 through 24, but I'll</p>

<p style="text-align: right;">Page 126</p> <p>1 come back to it. So we did get 2 kind of out of order in the way I 3 marked those. 4 MS. O'DELL: So plaintiff 5 objects to the Exhibit 25 through 6 32 being added to the record. 7 There's no testimony from 8 Dr. Zelikoff. So any assertion 9 that counsel has made that those 10 are relevant, we would object 11 and -- and oppose their being 12 included. 13 BY MR. HEGARTY: 14 Q. Doctor, if you would look at 15 your report which is Exhibit Number 2. 16 A. Yes, sir. 17 Q. On Page 2 of your report, 18 under the section Mandate and 19 Methodology? 20 A. Yes, sir, I see it. 21 Q. You say your mandate was to 22 look at the scientific literature and 23 assess whether there is biologic 24 plausibility for talc to cause ovarian</p>	<p style="text-align: right;">Page 128</p> <p>1 A. That was my -- that was -- 2 the request was to assess biological 3 plausibility. 4 Q. You say in that portion that 5 we just reviewed that -- you say for the 6 increased risk of ovarian cancer with 7 talc use. Did you assume for purposes of 8 your report that there is, in fact, an 9 increased risk of ovarian cancer with 10 talc use? 11 A. I'm sorry, sir, can you tell 12 me exactly which paragraph? 13 Q. In the first paragraph under 14 the section Mandate and Methodology, you 15 say "assess whether there is biologic 16 plausibility" -- "biologically plausible 17 explanation for the increased risk of 18 ovarian cancer with the perineal use of 19 talcum powder products." 20 Do you see that? See where 21 I'm reading? 22 A. I am sorry, sir, I do not. 23 Q. First paragraph under 24 page -- on Page 2 under mandate and</p>
<p style="text-align: right;">Page 127</p> <p>1 cancer from perineal use; is that 2 correct? 3 MR. GOLOMB: I'm sorry. 4 What page are you on? 5 MR. HEGARTY: Page 2. 6 THE WITNESS: Are you done? 7 BY MR. HEGARTY: 8 Q. Yes. 9 A. My mandate was to review the 10 scientific literature and assess whether 11 there was biological plausible 12 explanation for the increased risk of 13 ovarian cancer with perineal use of 14 talcum powder products, yes, that is 15 correct. 16 Q. Who gave you that mandate? 17 A. That was the plaintiff 18 attorney, Ms. Emory [sic] and Ms. O'Dell. 19 Q. You say -- 20 A. They -- I -- but let me add 21 they -- when you say gave me that 22 mandate, can you explain what you mean by 23 gave me that mandate? 24 Q. Well, from --</p>	<p style="text-align: right;">Page 129</p> <p>1 methodology. 2 A. Is that the notion of 3 biological plausibility paragraph, or are 4 you -- 5 Q. It's the first paragraph 6 under the section Mandate and 7 Methodology. 8 A. Well, sir, there are two, 9 two paragraphs. One says mandate. I was 10 asked to review the scientific 11 literature. Then there is another 12 paragraph that says the notion of 13 biological plausibility is 14 multifactorial. 15 Q. Doctor, if you'd listen to 16 my question. I said the first paragraph 17 under mandate and methodology. Do you 18 understand that? 19 A. I do not -- I do not see it 20 and you can -- 21 Q. You don't see the first 22 paragraph that begins mandate? 23 A. I just read that to you, 24 sir.</p>

<p style="text-align: right;">Page 130</p> <p>1 Q. And -- and you understand 2 that's the first paragraph of -- under 3 the section Mandate and Methodology? 4 A. Under mandate it says, "I 5 was asked to review the scientific 6 literature and assess whether there is 7 biological plausible explanation for the 8 increased risk of ovarian cancer and the 9 perineal use of talcum powder products." 10 Q. And for purposes of your 11 mandate, did you assume that there was, 12 in fact, an increased risk of ovarian 13 cancer with the perineal use of talcum 14 powder? 15 A. I made no assumptions. 16 Q. Did you individually assess 17 whether there is an increased risk of 18 ovarian cancer with the perineal use of 19 talcum powder products? 20 A. Could you please slow down? 21 You are asking the question very quickly. 22 Q. Okay. Did you 23 individually -- did you do an analysis of 24 whether there's an increased risk of</p>	<p style="text-align: right;">Page 132</p> <p>1 Q. What graduate students 2 assisted you? 3 A. Are you asking me for their 4 names? 5 Q. Yes. 6 A. Nick Lawrence who was a 7 master student. And Catherine Fecchi who 8 was my master student. Both of them have 9 which graduated. 10 Q. Did you bill plaintiffs' 11 counsel for their time? 12 A. I paid them out of my 13 pocket. 14 Q. And how much did you pay 15 them per hour? 16 A. \$25 per hour. 17 Q. Do you describe -- strike 18 that. 19 Anyone else assist you with 20 your literature search? 21 A. I'm sorry, anyone else? 22 Q. Assist you in your 23 independent comprehensive literature 24 review.</p>
<p style="text-align: right;">Page 131</p> <p>1 ovarian cancer with perineal use of 2 talcum powder products? 3 A. No. As you can see by the 4 mandate I was asked to assess the 5 biological plausibility. I did no 6 analysis of causation. 7 Q. You did no analysis of 8 whether there is, in fact, an increased 9 risk of ovarian cancer with the perineal 10 use of talcum powder products? 11 A. I did no analysis of 12 causation. I'm not an epidemiologist. 13 Q. You also discuss in the 14 third paragraph, which begins "I 15 performed an independent comprehensive 16 literature review." 17 A. I see that, yes. Thank you. 18 Q. That you did do a literature 19 search, correct? 20 A. I did do a literature 21 search, correct. 22 Q. Did you do this yourself? 23 A. I did do this myself along 24 with several graduate students.</p>	<p style="text-align: right;">Page 133</p> <p>1 A. No, sir. 2 Q. So doing the searches was 3 part of your methodology for preparing 4 your report, correct? 5 A. Doing the searches were my 6 initial, my initial, yes. 7 Q. Did you prepare in advance a 8 written protocol on how you were going to 9 do the searches? 10 A. I followed the same protocol 11 that I used for papers, publications, 12 advisory boards, grant -- grant reviews 13 and grants that I write. 14 Q. That's not my question. My 15 question is, did you prepare a written 16 protocol as far as how you were going to 17 do the literature review for purposes of 18 your report? 19 A. I did not do a written 20 outline as to how to do this. I've been 21 doing this for over 35 years. 22 Q. You agree that it was part 23 of your methodology is -- for your 24 literature search, to find and review all</p>

<p style="text-align: right;">Page 134</p> <p>1 literature that touch on talc and its 2 biologic effects, correct? 3 MS. O'DELL: Object to the 4 form. 5 THE WITNESS: My purpose was 6 to examine the literature, assess 7 the literature, first identify the 8 literature that I felt was -- 9 well, all -- all the literature 10 that I could find or that the 11 students could find, and from me 12 to review them in terms of 13 relevancy and pertinence to the 14 question that I was being asked. 15 BY MR. HEGARTY: 16 Q. Did you do any testing of 17 your methodology of doing searches to 18 ensure that you had captured all the 19 relevant literature? 20 MS. O'DELL: Object to the 21 form. 22 THE WITNESS: What do you 23 mean by testing? 24 BY MR. HEGARTY:</p>	<p style="text-align: right;">Page 136</p> <p>1 reviewed all of the literature out 2 there. I have no way of knowing 3 that I reviewed or have not. 4 I gathered the literature in 5 a systematic fashion and I 6 reviewed that literature. 7 BY MR. HEGARTY: 8 Q. Did you read every paper 9 that you found from your literature 10 search? 11 A. Only those that were 12 relevant. I read the abstracts to 13 determine whether it was in fact related 14 to the question that I was being asked. 15 When you do a literature 16 search, you come up with things that are 17 related and some that are not related at 18 all. 19 Q. Does your report anywhere 20 describe or include a description of how 21 you weighed the various authorities that 22 you reviewed? 23 A. My report talks about under 24 mandate and methodology how I -- the last</p>
<p style="text-align: right;">Page 135</p> <p>1 Q. Well, I don't know. Did you 2 do any tests, having someone else do 3 searches, repeating the searches, to see 4 if your original searches captured all of 5 the relevant literature? 6 A. We did several searches 7 doing -- using different words and 8 different aspects, so that we could -- we 9 got numerous duplicates because we came 10 in with different words, and key -- 11 keywords and key phrases. 12 Q. You do agree that it would 13 be necessary for a proper methodology to 14 reach opinions about biologic 15 plausibility, that you have reviewed all 16 the pertinent literature, correct? 17 MS. O'DELL: Object to the 18 form. 19 THE WITNESS: To my 20 knowledge I reviewed the 21 literature that was pertinent to 22 the question that I was being 23 asked. 24 I am not stating that I</p>	<p style="text-align: right;">Page 137</p> <p>1 paragraph, and that begins more than 300 2 publications, will -- talks about how 3 I -- how I looked at the publications and 4 how I decided how to cut down or dismiss 5 certain papers based on a closer 6 scrutiny. And I focused specifically for 7 biological plausibility and being a 8 toxicologist on in vitro, in vivo, and ex 9 vivo studies as well as cell studies, 10 animal studies, and tissues. 11 Q. Did you assign any numerical 12 value to each authority as they relate to 13 the importance to you? 14 A. I did not assign any 15 numerical value. There was no 16 quantitative measurement done. 17 Q. Was it also part of your 18 methodology to review all expert reports 19 in the litigation that concerned biologic 20 plausibility? 21 MS. O'DELL: Object to the 22 form. 23 THE WITNESS: Can you ask me 24 that again, please.</p>

<p style="text-align: right;">Page 138</p> <p>1 BY MR. HEGARTY: 2 Q. Sure. Was it part of your 3 methodology to review all expert reports 4 in the litigation concerning biologic 5 plausibility? 6 A. I -- I looked at reports 7 that had relevancy in terms of animal 8 models, in vitro cultures or ex vivo 9 studies, yes. My opinion was formed 10 primarily by the publications and the 11 science that I reviewed. 12 Q. Was it part of your 13 methodology for purposes of your opinions 14 to review the expert witness reports from 15 the litigation that touch on biologic 16 plausibility? 17 MS. O'DELL: Object to the 18 form. Asked and answered. 19 THE WITNESS: I reviewed the 20 publications and the book chapters 21 and information that I thought 22 would go towards my -- my opinion. 23 BY MR. HEGARTY: 24 Q. Your expert report, as we</p>	<p style="text-align: right;">Page 140</p> <p>1 THE WITNESS: To my 2 knowledge, I have no knowledge as 3 to how they selected the reports 4 or which reports they selected to 5 send. 6 BY MR. HEGARTY: 7 Q. You didn't have -- get a 8 list of all expert reports and decide 9 which ones you wanted, correct? 10 MS. O'DELL: Object to the 11 form. 12 THE WITNESS: I -- no. I 13 did not get a list of an entirety. 14 BY MR. HEGARTY: 15 Q. Do you know plaintiffs' 16 counsel methodology for purposes of 17 selecting the reports to provide to you? 18 A. I do not know their 19 methodology, but I would guess since 20 papers were supplied to me that had both 21 opinions and conclusions that led to 22 either positive associations or lack of 23 positive or data from scientific in vivo 24 studies, et cetera, that showed effects</p>
<p style="text-align: right;">Page 139</p> <p>1 have looked at, includes references to 2 several other experts' reports, correct? 3 We looked at that earlier. 4 A. If you say so, yes. 5 Q. Did you select those expert 6 reports for purposes of your review? 7 MS. O'DELL: Object to the 8 form. 9 THE WITNESS: I formed my 10 opinion with contributions from 11 some of the reports that I had. 12 But it was primarily based upon 13 literature reviews. 14 BY MR. HEGARTY: 15 Q. The reports that you had 16 were provided to you by plaintiffs' 17 counsel, correct? 18 A. Reports that I received was 19 supplied to me by plaintiffs' counsel. 20 Q. They selected the reports 21 that they were going to provide to you, 22 correct? 23 MS. O'DELL: Object to the 24 form.</p>	<p style="text-align: right;">Page 141</p> <p>1 and no effects, I would assume that I got 2 all the literature both -- from both 3 perceptions. 4 Q. Can you identify any medical 5 literature that you had reviewed prior to 6 being contacted by Ms. Emmel? 7 A. Medical literature on? 8 Q. Let me finish my question. 9 A. I'm sorry. 10 Q. Can you identify any 11 scientific or medical literature that you 12 reviewed before being contacted by 13 Ms. Emmel concerning talc and ovarian 14 cancer? 15 A. There is no literature that 16 I reviewed prior to me being contacted by 17 Ms. Emmel. 18 Q. Also in Exhibit B -- 19 A. B as in boy? 20 Q. -- boy -- to your report. 21 There is a listing of produced documents 22 by Bates number. 23 A. Correct. I see it, 24 "materials and data considered."</p>



<p style="text-align: right;">Page 142</p> <p>1 Q. Did the plaintiffs' counsel 2 provide you with copies of those 3 documents? 4 A. I have not gone through 5 every paper in those multiple binders. I 6 would assume that many of them are in 7 there. 8 Q. That's not my question, 9 Doctor. My question was, were those 10 documents provided to you by counsel for 11 plaintiffs? 12 MS. O'DELL: What documents 13 are you referring to? 14 MR. HEGARTY: The documents 15 that are listed by Bates number in 16 Exhibit B. 17 THE WITNESS: Oh, you're 18 talking about produced documents? 19 BY MR. HEGARTY: 20 Q. Yes. 21 A. Repeat your question, 22 please. 23 Q. Sure. Were the documents 24 listed by Bates number under produced</p>	<p style="text-align: right;">Page 144</p> <p>1 section "produced documents"? 2 A. I reviewed all of the 3 documents that are in the binder listed 4 as production documents. I did not check 5 one for another, so I cannot say I did 6 all of these -- 7 Q. Did you receive -- 8 A. -- or they did not. 9 Q. I'm sorry. Did you receive 10 from counsel from plaintiffs all the 11 documents that have been produced in this 12 litigation that concerned biologic 13 plausibility? 14 MS. O'DELL: Object to the 15 form. 16 THE WITNESS: I have no 17 knowledge of whether I received 18 every single document there is out 19 there. 20 BY MR. HEGARTY: 21 Q. Did you ask for -- did you 22 ask counsel for plaintiffs to provide you 23 all the documents that have been produced 24 in this case concerning biologic</p>
<p style="text-align: right;">Page 143</p> <p>1 documents provided to you by counsel for 2 plaintiffs? 3 A. Produced documents were 4 supplied to me in the folder that is 5 listed, production documents. 6 Q. Did you ask for those 7 specific documents? 8 A. I did not. 9 Q. Do you know what the 10 methodology was for selecting those 11 specific documents to send to you? 12 A. I do not. 13 MS. O'DELL: Object to the 14 form. 15 THE WITNESS: Sorry. 16 BY MR. HEGARTY: 17 Q. Did you ask for any 18 additional documents that would fall 19 under the definition of produced 20 documents besides those plaintiffs' 21 counsel provided to you? 22 A. Not to my knowledge. 23 Q. Did you review all the 24 documents that are listed under the</p>	<p style="text-align: right;">Page 145</p> <p>1 plausibility? 2 MS. O'DELL: Object to the 3 form. 4 THE WITNESS: Did not ask it 5 in that manner. 6 I did ask for in vitro 7 studies that they could find, ex 8 vivo studies, and I also did my 9 own literature search. Yes. 10 BY MR. HEGARTY: 11 Q. Were you -- did you 12 understand that -- or do you understand 13 that you've been provided with all the 14 produced documents that concern biologic 15 plausibility? 16 MS. O'DELL: Object to form. 17 THE WITNESS: I have no 18 knowledge of whether I received 19 all documents. 20 BY MR. HEGARTY: 21 Q. With regard to the produced 22 documents, did you sign a protective 23 order before reviewing those documents? 24 A. Regarding these produced</p>

<p style="text-align: right;">Page 146</p> <p>1 documents --</p> <p>2 Q. Yes.</p> <p>3 A. -- did I sign a protective</p> <p>4 order?</p> <p>5 Q. Yes.</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form. It's a confidentiality</p> <p>8 order in this litigation. You may</p> <p>9 not be aware of it.</p> <p>10 MR. HEGARTY: Okay, well,</p> <p>11 confidentiality order.</p> <p>12 MS. O'DELL: Just so it's</p> <p>13 not unclear to the witness.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Did you sign a</p> <p>16 confidentiality order before reviewing</p> <p>17 the Bates-stamped documents?</p> <p>18 A. I signed a confidentiality</p> <p>19 agreement early on.</p> <p>20 Q. Do you rely on any tests for</p> <p>21 purposes of your opinions that are not</p> <p>22 reported in the medical literature?</p> <p>23 A. Again --</p> <p>24 MS. O'DELL: Object to the</p>	<p style="text-align: right;">Page 148</p> <p>1 experiments that I'm aware of that</p> <p>2 were done that I have knowledge</p> <p>3 of? No I have no knowledge of any</p> <p>4 laboratory testing or experimental</p> <p>5 testing in this field.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. You did not do any testing</p> <p>8 yourself for purposes of developing your</p> <p>9 opinions in this case, correct?</p> <p>10 A. I did not do any laboratory</p> <p>11 tests.</p> <p>12 Q. All the opinions that are</p> <p>13 set out in your report about biologic</p> <p>14 plausibility between talc and ovarian</p> <p>15 cancer were formed after being contacted</p> <p>16 by counsel for plaintiffs about</p> <p>17 testifying as an expert in this case,</p> <p>18 correct?</p> <p>19 MS. O'DELL: Objection to</p> <p>20 form.</p> <p>21 THE WITNESS: After being</p> <p>22 contacted by the plaintiffs I did</p> <p>23 a literature search and followed</p> <p>24 the science.</p>
<p style="text-align: right;">Page 147</p> <p>1 form.</p> <p>2 THE WITNESS: Please</p> <p>3 describe "tests."</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. Well, did you rely on any</p> <p>6 testing or tests for purposes of your</p> <p>7 opinions that are not contained in the</p> <p>8 medical literature --</p> <p>9 MS. O'DELL: Objection to</p> <p>10 form.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. -- that we wouldn't have</p> <p>13 access to but that you did?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form. Besides those produced in</p> <p>16 the litigation?</p> <p>17 MR. HEGARTY: Yeah, that</p> <p>18 goes without saying.</p> <p>19 MS. O'DELL: It doesn't go</p> <p>20 without saying. It's an unfair</p> <p>21 question.</p> <p>22 THE WITNESS: So if I</p> <p>23 understand your question to mean</p> <p>24 are there any laboratory</p>	<p style="text-align: right;">Page 149</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. That's not my question,</p> <p>3 Doctor.</p> <p>4 My question is, all the</p> <p>5 opinions set out in your report about</p> <p>6 biologic plausibility as they relate to</p> <p>7 talc and ovarian cancer were formed after</p> <p>8 being contacted by counsel for</p> <p>9 plaintiffs, correct?</p> <p>10 A. That is correct.</p> <p>11 Q. Can you cite for us any</p> <p>12 occasion where you've done the exact same</p> <p>13 thing that you have done here to prepare</p> <p>14 your report; that is, do an analysis of</p> <p>15 the literature on the biologic</p> <p>16 plausibility between the exposure to a</p> <p>17 substance and a disease?</p> <p>18 A. Nothing has been done</p> <p>19 exactly like it's been here, but for</p> <p>20 advisory boards that I've been on,</p> <p>21 including the National Toxicology Board,</p> <p>22 the Institute of Medicine, the Institute</p> <p>23 of Engineering for the National Academies</p> <p>24 of Science, we have -- we were requested</p>

<p style="text-align: right;">Page 150</p> <p>1 to do literature reviews on the question 2 that's in front of them and come up with 3 an opinion based upon our literature 4 reviews. 5 Q. Have you ever published an 6 article in the medical literature where 7 you've done the same thing that you've 8 done here, which is to review all the 9 literature on a substance and a disease 10 and offer opinions as to whether there's 11 biologic plausibility between that 12 substance and a disease? 13 A. I have written reviews that 14 are a culmination of all of the 15 literature that I reviewed on topics. 16 Never one on ovarian cancer and talc. 17 And to my knowledge, I have 18 not offered an opinion, but followed a 19 conclusion from the science. 20 Q. I think my question is a 21 little bit different. My question is, 22 have you published any article in the 23 literature where you have done 24 essentially the same thing that you have</p>	<p style="text-align: right;">Page 152</p> <p>1 the words "biological feasibility" or 2 "potential mechanisms" or "plausible" -- 3 I may have used the word "plausibility," 4 but I have used words that are similar to 5 those. 6 Q. Doctor, when did you first 7 become aware of an alleged link between 8 ovarian cancer and talc use? 9 MS. O'DELL: Object to the 10 form. 11 THE WITNESS: When did I 12 first become aware of the alleged 13 link between ovarian cancer and 14 talc use? From -- from the media. 15 I would say maybe a year prior to 16 being contacted by Ms. Emmel. 17 BY MR. HEGARTY: 18 Q. Can you cite for me any 19 scientific or medical group, entity or 20 organization who has concluded that 21 genital talc use causes ovarian cancer? 22 A. I -- really, my opinion is 23 based on biological plausibility. 24 Q. I understand that. But my</p>
<p style="text-align: right;">Page 151</p> <p>1 done here, which is review all the 2 literature on an exposure and a disease 3 and offer opinions as to whether there's 4 biologic plausibility between the 5 exposure and the disease? 6 A. Most of the papers that I 7 publish will offer a potential, whether a 8 speculative potential or one that is 9 defined within other published literature 10 as a potential mechanism of action or as 11 potential plausible outcome. 12 So for any published paper 13 from the research that I've done or that 14 people do, we explain an observation that 15 has been found in our laboratory from 16 testing, as you call it. And we will 17 explain the observation in terms of 18 biological plausibility, if that's what 19 you're referring to. 20 Q. Well, have you ever used the 21 phrase "biologic plausibility" in any 22 published article? 23 A. I cannot cite them for you, 24 but I -- I am confident that I have used</p>	<p style="text-align: right;">Page 153</p> <p>1 question is simply from your knowledge, 2 here today, can you cite for me any 3 scientific or medical group, entity or 4 organization who has concluded that 5 genital talc use causes ovarian cancer? 6 MS. O'DELL: Object to the 7 form. 8 THE WITNESS: Well, 9 concluded is -- is a word for 10 discussion. 11 IARC in the 1993 report from 12 inhalation toxicology and 13 inhalation of talc did show that 14 there was tumor induction in 15 female rats in the lungs and that 16 there was adrenal gland tumors 17 that were formed. 18 BY MR. HEGARTY: 19 Q. Well, IARC has never 20 concluded that the use of talc in the 21 genital area causes ovarian cancer, 22 correct? 23 A. You asked me whether there 24 was any body of literature or any</p>



<p style="text-align: right;">Page 154</p> <p>1 advisory boards or any institution which 2 has concluded that there is a causal 3 relationship. And I've cited to you a 4 study -- 5 Q. That's not my question. My 6 question was can you cite for me any 7 scientific or medical group, entity or 8 organization who has concluded that 9 genital talc use causes ovarian cancer. 10 MS. O'DELL: Object to the 11 form. 12 THE WITNESS: I have -- I 13 have given you information on a 14 study done at the national 15 toxicology program. 16 BY MR. HEGARTY: 17 Q. Is that the extent of your 18 answer? 19 A. There are -- to my 20 knowledge, that's the best study that I 21 can cite to you. 22 Q. That's a study, correct? 23 A. That was a study, and they 24 are also a body that makes conclusions.</p>	<p style="text-align: right;">Page 156</p> <p>1 BY MR. HEGARTY: 2 Q. II-B is possibly 3 carcinogenic, correct? 4 A. To humans. 5 Q. I'm sorry? 6 A. To humans. Possibly 7 carcinogenic to humans. That doesn't 8 exclude the fact that there is animal 9 data supporting that conclusion. If 10 there were no animal data it -- it would 11 not even be considered a II-B. So 12 there -- there's evidence that the IARC 13 evaluated and came up with a II-B 14 classification. 15 Q. Is it your opinion that the 16 biologic plausibility of talc products 17 causing ovarian cancer has been generally 18 accepted in the medical community? 19 A. I think it depends on the 20 medical community. 21 Q. Well, aside from any medical 22 community that has accepted that there is 23 biologic plausibility between the use of 24 talc products in -- in ovarian cancer.</p>
<p style="text-align: right;">Page 155</p> <p>1 Q. That study did not involve 2 any commentary on ovarian cancer, 3 correct? 4 A. The study did not involve 5 commentary on that. 6 Q. Can you name any regulatory 7 body who has stated that talc use is a 8 cause of ovarian cancer? 9 A. Not as I sit here right now. 10 But again, making conclusions on 11 causation was not my question, is not 12 my -- is not within my purview. 13 And there are different 14 levels of cancer conclusion. For 15 instance, IARC has several 16 classifications. And -- as you know, I, 17 II-A, II-B, et cetera. 18 Q. And what is IARC's 19 classification of talc use in the genital 20 area? 21 MS. O'DELL: Object to the 22 form. 23 THE WITNESS: To my 24 knowledge, I think it's a II-B.</p>	<p style="text-align: right;">Page 157</p> <p>1 Let me -- let me restate that. 2 Can you cite for me any 3 medical community that has accepted that 4 there is biologic plausibility of talc 5 products causing ovarian cancer? 6 A. I'm not knowledgeable at -- 7 about all the medical communities and 8 what disciplines they are in. 9 Q. Well, can you cite for me 10 any medical or scientific community that 11 has accepted that there is biologic 12 plausibility of talcum powder products 13 causing ovarian cancer? 14 A. I have no knowledge of that. 15 That doesn't mean it's not out there. It 16 means that I have no knowledge of that. 17 Q. You have no knowledge -- 18 you -- so you cannot testify that the 19 medical or scientific communities have 20 accepted that there is biologic 21 plausibility of talcum powder products 22 causing ovarian cancer? 23 MS. O'DELL: Object to the 24 form.</p>

<p style="text-align: right;">Page 158</p> <p>1 THE WITNESS: What I'm 2 saying is I have no knowledge of 3 the documents they have put out 4 with a conclusion as a white paper 5 or any other published literature 6 that has made that conclusion. 7 BY MR. HEGARTY: 8 Q. What does -- sorry. 9 A. Or has not made that 10 conclusion. 11 Q. What does general acceptance 12 mean to you? 13 A. General acceptance -- for 14 example, benzene, it causes leukemia and 15 other blood cancers. That is a general 16 acceptance by the medical community which 17 we all adhere to, abide by, based upon 18 the excessive amount of literature that 19 is out there showing -- proving and 20 addressing Hill's criteria and coming up 21 with the fact that it is a -- it is a 22 carcinogen for blood cancers. 23 That is general knowledge. 24 General knowledge is something saying</p>	<p style="text-align: right;">Page 160</p> <p>1 Thank you. 2 BY MR. HEGARTY: 3 Q. You don't -- you don't know 4 what a cosmetic is? 5 A. I'm asking you what your 6 definition is. 7 Q. Well, I -- what is your 8 definition? 9 A. A definition of a cosmetic 10 is -- since I'm not in the cosmetic 11 field -- a cosmetic is something that is 12 used for hygiene or aesthetics and used 13 dermally. 14 Q. Have you ever written any 15 scientific article about a cosmetic under 16 your definition? 17 A. Not to my knowledge, but I 18 would have to look at all of my papers 19 again, if you'd like me to do that. 20 Q. Can you cite for me any 21 publication of yours where you comment on 22 asbestos? 23 A. I would have to look at my 24 references. I go back from 1982.</p>
<p style="text-align: right;">Page 159</p> <p>1 that nickel can be a carcinogen, nickel 2 is a carcinogen and is classified by IARC 3 as a I. In that case, the general 4 population is aware of that. 5 Q. Before being hired by the 6 plaintiffs' lawyers in this case, you had 7 never written anything about talc, 8 correct? 9 A. That's correct. 10 Q. Or commented on talc in any 11 setting, correct? 12 A. Other than teaching? 13 Q. Other than the teaching 14 reference you cited earlier? 15 A. That's correct. 16 Q. Before being hired by 17 plaintiffs' counsel you had never written 18 anything about any cosmetic, correct? 19 MS. O'DELL: Object to the 20 form. 21 Could you please -- it's 22 vague in terms of cosmetic. Do 23 you have a definition in mind? 24 THE WITNESS: Exactly.</p>	<p style="text-align: right;">Page 161</p> <p>1 Q. Sitting here today, can you 2 cite for us, without looking at any 3 references, any article you've ever 4 written about asbestos? 5 MS. O'DELL: Doctor, if you 6 need to look at your CV, you're 7 welcome to do that. 8 BY MR. HEGARTY: 9 Q. Well, my question didn't ask 10 about the CV. I said just simply sitting 11 here today, just based on your memory -- 12 A. Okay. 13 Q. -- are you able to recall 14 any article you've ever written about 15 asbestos. 16 MS. O'DELL: If you would 17 like to look at your CV, it's in 18 front of you. You are welcome 19 to -- to do that. 20 MR. HEGARTY: I'll withdraw 21 the question. 22 BY MR. HEGARTY: 23 Q. Doctor, have you ever 24 written any article about a fragrance?</p>

<p style="text-align: right;">Page 162</p> <p>1 A. I would also like to look at 2 my CV. 3 Q. Without looking at your CV, 4 you can't say one way or the other? 5 A. I can't say conclusively. 6 My CV and my publications go back to 7 1982. It was quite a while ago. 8 Q. And you can't say 9 conclusively whether you've written an 10 article about asbestos? 11 A. I would rather look at my -- 12 my publications. 13 Q. Okay. Have you ever 14 written -- 15 A. Would you like me to do 16 that, sir? 17 Q. No. I'm not asking you to 18 do that right now. 19 A. Thank you. 20 Q. Sitting here today without 21 looking at your CV, can you cite for me 22 any article you've ever written about 23 asbestos? 24 MS. O'DELL: Objection to</p>	<p style="text-align: right;">Page 164</p> <p>1 as scientists, involved as co-authors, 2 oftentimes. And I do not recall back to 3 1982. 4 Q. Well, for purposes of your 5 report, you do not cite to any of your 6 own work, correct? 7 A. That is correct. 8 Q. You've never written 9 anything about talc and ovarian cancer, 10 correct? 11 A. I think I asked and answered 12 that. I think I answered that. But I 13 can repeat it. 14 Q. No, you did not. I did not 15 ask you that question, ma'am. 16 A. So can -- 17 Q. I asked you had you ever 18 written anything about talc. My question 19 that I just asked you is have you ever 20 written anything about talc and ovarian 21 cancer? 22 A. To my knowledge, as I sit 23 here now without looking at my 24 publications, no.</p>
<p style="text-align: right;">Page 163</p> <p>1 form. 2 THE WITNESS: To my 3 knowledge at this particular 4 moment, I cannot cite for you an 5 article that I specifically wrote 6 on asbestos. Whether or not I was 7 a co-author on one, I cannot 8 recall. 9 BY MR. HEGARTY: 10 Q. Would that be the same 11 answer as to a fragrance? 12 A. I -- I would really rather 13 look at my CV and my publications and 14 book chapters. 15 Q. Before being contacted by 16 counsel for plaintiffs in this case, you 17 had never developed or offered any 18 opinions about talc, correct? 19 A. That is correct. 20 Q. You've never written 21 anything about ovarian cancer, correct? 22 A. Again, just to put on the 23 record, I would really like to look at my 24 CV and look at my publications. We are,</p>	<p style="text-align: right;">Page 165</p> <p>1 Q. Prior to being contacted by 2 plaintiff's counsel have you ever 3 reviewed the body of literature on the 4 etiologies or biology related to ovarian 5 cancer? 6 A. Not prior to being 7 contacted, no. 8 Q. You've never published any 9 opinions about the causes of ovarian 10 cancer, correct? 11 A. To my knowledge, sitting 12 here, no. 13 Q. You never published any 14 opinions about the risk factors for 15 ovarian cancer, correct? 16 A. I really -- I'm not sure. I 17 know that I have given that information, 18 not an opinion, but have given that 19 information in teaching courses. 20 Q. Have you ever taught any 21 courses on asbestos? 22 A. Asbestos has been included. 23 I give lectures in my organ system 24 toxicology course as well as in my</p>

<p style="text-align: right;">Page 166</p> <p>1 toxicology course for biology masters. I 2 give courses in air pollutants and 3 cancer-causing agents and the toxicology 4 of -- of airborne. 5 Q. Have you ever taught in your 6 courses any discussion about fragrances 7 and toxicity? 8 A. It may have come up as a 9 minor point. We talk about pesticides, 10 we talk about air pollutants. We talk 11 about metals. Fragrances, we talked 12 about limonene, eugenol, menthol and 13 other fragrances in that realm in the 14 discussion of electronic cigarettes and 15 the aerosols produced by them. 16 Q. And you provided to us all 17 the lectures or the content of lectures 18 that you've given where you mentioned 19 talc, correct? 20 A. I was not asked to -- 21 MS. O'DELL: Object to the 22 form. 23 THE WITNESS: I was not 24 asked to provide them. But please</p>	<p style="text-align: right;">Page 168</p> <p>1 reproductive docs who do focus on this, 2 yes. 3 Q. And that has not been an 4 area of your focus, correct? 5 A. Not -- not in past. Has not 6 been a primary focus. 7 Q. You have provided for us 8 your CV, correct? 9 A. That is correct. 10 Q. That's included as part of 11 Exhibit B to your expert report, correct? 12 MS. O'DELL: Objection to 13 form. 14 THE WITNESS: I think it's 15 stated here as Exhibit A. 16 BY MR. HEGARTY: 17 Q. It's Exhibit A to your 18 expert report. Is that a current CV of 19 yours? 20 A. It was updated in 21 August 2018. So it is not completely 22 updated as of January 2019. 23 Q. Did you bring an updated CV 24 to your deposition?</p>
<p style="text-align: right;">Page 167</p> <p>1 let me explain my teaching style. 2 My teaching style is such 3 that I use few PowerPoints as 4 queues. And much of my teaching 5 is done verbally, one-on-one. And 6 they're not recorded. 7 So there is really not that 8 much -- there is nothing to supply 9 to counsel. 10 BY MR. HEGARTY: 11 Q. Well, other than the 12 reference that you provided to us earlier 13 about talc and ovarian cancer, you have 14 not otherwise lectured regarding this 15 subject, correct? 16 A. That is correct. 17 Q. There are toxicologists who 18 focus on issues dealing with reproductive 19 medicine or reproductive sciences such as 20 ovarian cancer and uterine cancer, 21 correct? 22 A. There are scientists whose 23 major focus is on talc and ovarian cancer 24 and there are OB/GYNs as well as</p>	<p style="text-align: right;">Page 169</p> <p>1 A. I did not. 2 Q. As you stated -- 3 A. I'm sorry. I can provide 4 that. 5 Q. Does your CV anywhere list 6 any professional experience on ovarian 7 cancer? 8 A. Excuse me. Not to my 9 knowledge, in briefly reviewing my CV, 10 and not to my knowledge as I sit here. 11 Q. Does your CV list any 12 professional experience regarding 13 asbestos? 14 A. Specifically, asbestos as I 15 review, no. No, sir. 16 Q. Does your CV list any 17 professional experience regarding 18 fragrances? 19 A. Not to my knowledge, no, 20 sir. But you're asking me only what's in 21 my CV. 22 I have -- I have worked -- I 23 have looked at or heard about from other 24 advisory boards things to do with</p>

<p style="text-align: right;">Page 170</p> <p>1 flavorants, as I said with electronic 2 cigarettes, hookah and smokeless tobacco. 3 So I am familiar with other -- which may 4 not be listed here in detail, which is 5 not listed here in detail, on flavorants 6 and some of those same flavors used in 7 electronic cigarettes are also, I found, 8 listed here. 9 Q. Has any entity or agency 10 consulted you with regard to diseases of 11 the female reproductive tract? 12 MS. O'DELL: Object to the 13 form. 14 THE WITNESS: Not to my 15 knowledge. 16 BY MR. HEGARTY: 17 Q. And no one has ever asked 18 you to look into any of the issues set 19 out in your report besides plaintiffs' 20 counsel, correct? 21 A. I'm sorry. Again? 22 Q. No one has asked you to look 23 at the issues set out in your expert 24 report in this case other than</p>	<p style="text-align: right;">Page 172</p> <p>1 or scientist who believes that there is 2 biologic plausibility between use of 3 talcum powder and ovarian cancer? 4 MS. O'DELL: Object to form. 5 THE WITNESS: I have not 6 spoken to any doctors in that 7 regard. 8 BY MR. HEGARTY: 9 Q. How about any scientists? 10 A. I have not spoke to any 11 scientists in that regard. 12 Q. Have you -- 13 A. My opinion was specifically 14 based upon the scientific literature that 15 I had access to. 16 Q. Have you ever had your 17 deposition taken before? 18 A. I have. Yes, sir. 19 Q. How many times? 20 A. One that I can recall. Two 21 that I'm now recalling. One that was 22 in -- for Dow Chemical on breast implants 23 and relationship with autoimmune disease 24 and one from a personal attorney who</p>
<p style="text-align: right;">Page 171</p> <p>1 plaintiffs' counsel, correct? 2 A. This specific ovarian cancer 3 and asbestos, that is correct. 4 Q. You have not submitted your 5 expert report in this case for peer 6 review, correct? 7 A. The only ones who have seen 8 my report have been the plaintiff 9 attorneys, to my knowledge. 10 If that was given out to 11 others at that point, I do not -- I do 12 not have knowledge of that. 13 Q. You certainly have not 14 submitted your report for peer review, 15 correct? 16 A. I have not submitted my 17 report for peer review. 18 Q. Have you spoken to any 19 physicians who treat ovarian cancer 20 regarding talc and ovarian cancer? 21 A. I have not. 22 Q. Other than experts 23 identified by plaintiffs in this 24 litigation, can you identify any doctor</p>	<p style="text-align: right;">Page 173</p> <p>1 was -- who had a client who was exposed 2 to wood burning from a wood stove, an 3 outdoor wood stove. 4 Q. As to the latter case, do 5 you know where that case was pending or 6 was filed? 7 A. I was deposed in New York 8 City. 9 Q. Do you know the name of the 10 case? 11 A. I'm afraid not, sir. 12 Q. How long ago was it? 13 A. 15 years. 14 Q. You were testifying on 15 behalf of the plaintiff in that case? 16 MS. O'DELL: Object to form. 17 THE WITNESS: I was not 18 testifying. I was deposed for 19 the -- sorry, for the person who 20 was making the claim that they had 21 increased asthma as a result of 22 neighbors use of a wood boiler. 23 BY MR. HEGARTY: 24 Q. In the Dow Chemical breast</p>



<p style="text-align: right;">Page 174</p> <p>1 implant case, were you testifying as an 2 expert witness? 3 A. I was. 4 Q. On behalf of the plaintiffs? 5 A. If you're talking about on 6 the part of Dow, yes. 7 Q. Well, on the part of Dow who 8 was the defendant or the plaintiffs? 9 A. Dow was the defendant. I'm 10 sorry. 11 Q. Were you testifying on 12 behalf of Dow? 13 A. I was. 14 Q. Any other cases you've been 15 deposed in? 16 A. Not that I can recall. 17 Q. Have you been identified in 18 any other cases as an expert witness 19 besides this one to your knowledge? 20 A. I have done literature 21 reviews for a number of attorneys but 22 have not been deposed. 23 Q. My question is specific to 24 whether you -- whether you are aware that</p>	<p style="text-align: right;">Page 176</p> <p>1 cases -- are there any articles on which 2 you rely for purposes of your opinions -- 3 strike that. Let me ask it a different 4 way. 5 How many articles have you 6 published since August of 2018? 7 A. I'm going to look at the 8 last publication. 9 I have one that was accepted 10 in press on the Garfield community and 11 looking at chromium exposure and doing 12 community engagement for the community 13 and looking at blood level of 14 measurements -- or toenail measurements, 15 excuse me, toenail measurement of 16 chromium, as they're impacting 17 communities environmentally. 18 Also two publications have 19 come out with the lead author, my being a 20 corresponding author with the lead author 21 being from the University of Rochester in 22 the area of inhaled particulate matter 23 and -- during pregnancy and effects on 24 the -- on the offspring and on the fetus.</p>
<p style="text-align: right;">Page 175</p> <p>1 you've been designated, identified, in 2 the case as a testifying expert besides 3 this case. Are you aware of any such 4 cases? 5 A. Not to my knowledge. 6 Q. I know I referred earlier to 7 your CV. But I'm marking it as 8 Exhibit 22. You can look at that one or 9 Exhibit 22. 10 (Document marked for 11 identification as Exhibit 12 Zelikoff-22.) 13 BY MR. HEGARTY: 14 Q. Are there any publications 15 of yours that relate to any of the issues 16 in this case that are not included in 17 your CV? 18 MS. O'DELL: Object to form. 19 THE WITNESS: Let's talk 20 about the issues of the case. Can 21 you define them a little better? 22 BY MR. HEGARTY: 23 Q. Yeah, let me ask you a 24 different question. Are there any</p>	<p style="text-align: right;">Page 177</p> <p>1 Q. You are not a medical 2 doctor, correct? 3 A. I am not a medical doctor, 4 although I did go to medical school for 5 my Ph.D. training. 6 Q. You can't treat patients, 7 correct? 8 A. I do not treat patients. 9 Q. You are not an oncologist, 10 correct? 11 A. I am not an oncologist. 12 Q. You have no training in 13 oncology, correct? 14 A. I have no training in 15 oncology. I have training in pathology, 16 which is what I got my Ph.D. degree in at 17 a medical school. 18 Q. You have never diagnosed or 19 treated a disease in a patient, including 20 cancer, correct? 21 A. That is correct. 22 Q. You have no expertise in 23 treating patients with ovarian cancer, 24 correct?</p>



<p style="text-align: right;">Page 178</p> <p>1 A. I have no expertise in that, 2 no. 3 Q. You have no expertise in 4 diagnosing ovarian cancer, correct? 5 A. I do not. 6 Q. You are not an expert on 7 asbestos, correct? 8 A. I have not been classified 9 as an expert in asbestos, although as I 10 said, I do work in air pollution and if 11 asbestos is in the confines -- taken in 12 the confines of air pollution, I could 13 speak to that. But I have not been 14 designated as an expert. 15 Q. What's the difference 16 between amphibole and serpentine forms of 17 asbestos? 18 MS. O'DELL: Object to form. 19 BY MR. HEGARTY: 20 Q. You can answer. 21 A. It depends on whether it's 22 asbestiform or non-asbestiform. 23 Q. Okay. Asbestiform. What's 24 the difference between amphibole and</p>	<p style="text-align: right;">Page 180</p> <p>1 those forms can exist both in 2 crystalline form or in a 3 non-asbestiform. 4 So they are both -- both 5 concluded to be asbestos. 6 BY MR. HEGARTY: 7 Q. Well, are there any 8 differences between -- 9 A. By the EPA. 10 Q. Are there any differences 11 between amphibole and serpentine forms of 12 asbestos? 13 MS. O'DELL: Object to form. 14 THE WITNESS: Well, they are 15 different -- they are different 16 minerals. But they are both 17 classified as asbestos. 18 BY MR. HEGARTY: 19 Q. Any other differences? 20 A. It -- both of which contain 21 carcinogenic -- classified I, as IARC. 22 Both have within them carcinogenic 23 asbestos. To my knowledge, that is -- 24 that is all I --</p>
<p style="text-align: right;">Page 179</p> <p>1 serpentine forms? 2 A. Well -- 3 MS. O'DELL: Object to the 4 form. 5 THE WITNESS: Amphibole 6 lists serpentine which is 7 associated with chrysotile. They 8 all have an aspect ratio of, 9 depending on who you are looking 10 at, whether it's three to one or 11 five to one. Johnson &amp; Johnson 12 includes it as five to one, which 13 is length-to-width ratio. They 14 both have the same length-to-width 15 ratio. 16 If they're asbestiform, then 17 they are fibers that are made up 18 of fibrils. They both have that. 19 And they go in a 20 longitudinal manner and they are 21 in one direction. 22 Amphibole includes within it 23 the crocidolite, and as well as 24 tremolite, amosite, and some of</p>	<p style="text-align: right;">Page 181</p> <p>1 Q. What was the most 2 commercially used asbestos? 3 A. Well, it -- it depends on 4 the time. But for commercial use, in 5 paints and housing and insulation, it was 6 either chrysotile was used commercially 7 and crocidolite was also used 8 commercially. 9 Q. Okay. How did the supposed 10 toxicities various -- vary across the 11 various forms of asbestos? 12 MS. O'DELL: Object to the 13 form. 14 THE WITNESS: When you say 15 toxicity what do you mean? 16 BY MR. HEGARTY: 17 Q. The -- the toxicities vary 18 across the various forms. 19 MS. O'DELL: Object to the 20 form. 21 THE WITNESS: Mm-hmm. It 22 depends on the chemical 23 composition. It depends on the 24 surface material. It depends on</p>

<p style="text-align: right;">Page 182</p> <p>1 the amount of iron. It depends on 2 the size of the fiber or the 3 crystal. 4 And so depending upon those 5 factors you are going to have 6 differences in toxicity. 7 BY MR. HEGARTY: 8 Q. Well, how does -- does 9 tremolite asbestos compare to chrysotile 10 asbestos in terms of toxicity? 11 A. I don't really -- I don't 12 think I can answer that in terms of 13 ranking it. I can tell you that 14 chrysotile is a well-known carcinogen, 15 well-established carcinogen by the 16 agencies. That tremolite is an amphibole 17 and it can exist in both forms, either 18 asbestiform in the long longitudinal 19 fibriles, or it can exist as a mineral 20 that has dimensions in all different 21 directions. 22 So tremolite -- it's 23 difficult to rank, but chrysotile appears 24 to be -- when you say more toxic, you</p>	<p style="text-align: right;">Page 184</p> <p>1 Q. You are not an expert in 2 fragrances, correct? 3 MS. O'DELL: Object to form. 4 THE WITNESS: I have -- I 5 have not been listed as an expert 6 in fragrances. 7 BY MR. HEGARTY: 8 Q. Would you consider yourself 9 an expert in fragrances? 10 A. I am a toxicologist so I can 11 review chemicals and make a decision or 12 assess their toxicity based on outcomes. 13 Q. Before being contacted by 14 Ms. Emmel in this case, would you have 15 considered yourself an expert in 16 fragrances? 17 MS. O'DELL: Objection. 18 THE WITNESS: Expert in 19 fragrances. It is not something I 20 studied in my own laboratory. 21 However, a toxicologist 22 should be able to go into the 23 literature and have a greater 24 knowledge than most people in</p>
<p style="text-align: right;">Page 183</p> <p>1 have to understand what is the outcome 2 that you're looking at. They can both 3 cause toxicity. I don't know what you 4 exactly mean by more toxic. 5 Do you mean at a given 6 dose -- what -- what do you mean by -- 7 Q. I didn't -- I didn't use the 8 word "more toxic." I just -- I asked you 9 how does tremolite asbestos compare to 10 chrysotile asbestos in terms of toxicity. 11 A. I think I -- yeah, that's a 12 very difficult question to a 13 toxicologist. Because when you compare 14 toxicity across -- across lines, you have 15 to somehow rank them based on a 16 particular outcome. 17 So toxicity could be does it 18 produce more lactate dehydrogenase when 19 put in a macrophages culture of -- of 20 pulmonary cells, or does it produce more 21 apoptosis. You can't just say toxicity 22 in my opinion. You have to give me an 23 outcome. Does this produce more toxicity 24 in this area.</p>	<p style="text-align: right;">Page 185</p> <p>1 looking up different chemicals. 2 BY MR. HEGARTY: 3 Q. You are not an expert on 4 talc, correct? 5 MS. O'DELL: Object to the 6 form. 7 THE WITNESS: I have done 8 much work in dust, including the 9 World Trade Center dust. I've 10 done work on diesel exhaust and 11 other things that are powders. So 12 particularly talc, I don't think I 13 am classified as a talc expert. 14 But as I said I've done much 15 work in other dusts, other 16 aerosols, vapors, gases, 17 particles, and I am an expert in 18 particles. 19 BY MR. HEGARTY: 20 Q. You are not a geneticist, 21 correct? 22 A. I'm -- if a geneticist is 23 someone who has been trained specifically 24 in genetics, I have not been trained in</p>

<p style="text-align: right;">Page 186</p> <p>1 genetics. I have had courses in 2 molecular toxicology and I do teach some 3 molecular toxicology. 4 Q. You are not a mineralogist, 5 correct? 6 A. I am not a mineralogist. 7 Q. You are not an expert on 8 testing for the presence of asbestos, 9 correct? 10 A. I am not a chemist. 11 Q. You are not an expert on 12 testing the air for asbestos, correct? 13 A. We collect -- I collect 14 particles in the air. I do air 15 measurements. That is the basis of my 16 research. 17 When it comes to asbestos, 18 we will send those -- those filters out 19 to be analyzed by an expert laboratory, 20 and then we will help interpret the data. 21 Q. You are not an industrial 22 hygienist, correct? 23 A. I work with industrial 24 hygienists, but I do not have a degree in</p>	<p style="text-align: right;">Page 188</p> <p>1 components by percentage of Johnson's 2 Baby Powder? 3 MS. O'DELL: Object to the 4 form. Vague. 5 THE WITNESS: I cannot -- 6 although I have looked at it, I 7 cannot tell you that off the top 8 of my head. I would have to 9 look -- refresh my memory by 10 looking at an exhibit or a 11 document. 12 BY MR. HEGARTY: 13 Q. What were the current 14 components of Johnson's Baby Powder by 15 percentage from the 19 -- 1900s through 16 the present? 17 A. I cannot -- 18 MS. O'DELL: Excuse me. 19 Excuse me. Object to the form. 20 Vague. 21 THE WITNESS: I cannot give 22 you percentages off the top of my 23 head. If you allow me to look at 24 a document I -- I could tell you.</p>
<p style="text-align: right;">Page 187</p> <p>1 it. 2 Q. You are not an expert on 3 Johnson's Baby Powder, correct? 4 MS. O'DELL: Objection to 5 form. 6 THE WITNESS: I am not an 7 expert on -- I -- could you 8 rephrase that? 9 BY MR. HEGARTY: 10 Q. I don't think I can. 11 A. I don't know what you mean 12 by expert. I mean I need to have -- I 13 think I need to have some criteria that 14 would make me an expert. If you are 15 talking about the number of publications 16 I have or whether I've testified. 17 I -- the word "expert" 18 throws me off a bit. 19 Q. Well, where is the talc for 20 J&amp;J's Baby Powder been mined over the 21 years? 22 A. In Vermont, in Italy, and 23 also in Korea. 24 Q. What are the current</p>	<p style="text-align: right;">Page 189</p> <p>1 BY MR. HEGARTY: 2 Q. Are the opinions in your 3 report specific to particular 4 formulations of talcum powder consumer 5 products? 6 MS. O'DELL: Object to the 7 form. 8 THE WITNESS: Are the 9 opinions in your report specific 10 to particular formulations. 11 My opinion is based on 12 biological plausibility based on 13 studies that have used talcum 14 powder or talc or fibrous talc or 15 nonfibrous talc. 16 BY MR. HEGARTY: 17 Q. Did you analyze specifically 18 the biologic plausibility of the 19 components of Johnson's Baby Powder for 20 purposes of your opinions? 21 MS. O'DELL: Object to the 22 form. 23 THE WITNESS: I looked at 24 the individual components that I</p>

<p style="text-align: right;">Page 190</p> <p>1 was aware of. And looked at their 2 ability to cause inflammation, 3 let's say, or their carcinogenic 4 potential. 5 BY MR. HEGARTY: 6 Q. But did you look 7 specifically -- did you specifically 8 analyze biologic plausibility specific to 9 J&amp;J's -- strike that. 10 Did you analyze biological 11 plausibility specific to Johnson's Baby 12 Powder in your report? 13 A. If the literature was there, 14 there was some -- I'm sorry, I can't 15 remember the author now. But there were 16 authors and investigators that did use 17 Johnson's Baby Powder in their studies, 18 and if they used those studies, and I 19 used that for -- to provide biological 20 plausibility, then yes. 21 Q. What studies were done 22 specific to Johnson's Baby Powder? 23 MS. O'DELL: Object to the 24 form.</p>	<p style="text-align: right;">Page 192</p> <p>1 in the question that I was asked to 2 comment on, but from cursory knowledge 3 there are different cell types. 4 Q. What's the difference 5 between a low grade and high grade tumor? 6 A. The induction of 7 invasiveness and proliferation capacity. 8 Q. What is thought to be the 9 primary origin of high-grade serous 10 ovarian cancer? 11 MS. O'DELL: Object to the 12 form. 13 THE WITNESS: Primary 14 origin. I'm not sure what that 15 means. 16 BY MR. HEGARTY: 17 Q. Well, what is -- what is 18 typically the primary location or origin 19 of high-grade serous? 20 A. Do you mean in the ovary? 21 Q. I don't think I can ask it 22 any different way. 23 A. Well, I don't quite 24 understand your question.</p>
<p style="text-align: right;">Page 191</p> <p>1 THE WITNESS: Of course all 2 of the product documents. 3 Sorry, I'm having difficulty 4 recalling that -- the particular 5 name. It's not a memory test. 6 I'm sorry. 7 BY MR. HEGARTY: 8 Q. With regard to ovarian 9 cancer, what are the subtypes of the 10 disease? 11 A. Well, as -- as -- 12 MS. O'DELL: Object to the 13 form. 14 THE WITNESS: -- was pointed 15 out, I'm not an OB/GYN. I can 16 tell you just from cursory 17 knowledge that there are serous, 18 high grade, low grade serous, 19 endometrioid, mucous cell, 20 epithelioid. 21 BY MR. HEGARTY: 22 Q. What are the differences in 23 subtypes? 24 A. Again, this is not in my --</p>	<p style="text-align: right;">Page 193</p> <p>1 Q. What is the primary origin 2 of clear cell carcinoma? 3 MS. O'DELL: Object to the 4 form. 5 THE WITNESS: If you're 6 asking me the types, I don't 7 recall the type of cell for clear 8 cell carcinoma. Again, I'm not an 9 OB/GYN, and I'm not a histologist. 10 BY MR. HEGARTY: 11 Q. For purposes of your report, 12 did you analyze biologic plausibility for 13 each subtype of ovarian cancer? 14 A. No, sir. 15 Q. Is it your opinion that the 16 etiology of each of the subtypes of 17 ovarian cancer is the same? 18 A. There are many 19 commonalities. 20 As I said, from my cursory 21 knowledge and my background, early 22 background in 1980, of being a -- 23 pathology when this was not even 24 considered or thought about, there is</p>

<p style="text-align: right;">Page 194</p> <p>1 etiologies -- I'm sorry, I had to refresh 2 my memory of your question. 3 There are different 4 etiologies. Many -- and many of the 5 same, and so I think that -- if I may 6 gather my thoughts and refresh your 7 question. 8 So as I said, in terms of my 9 opinion that the etiology in each of the 10 subtypes of ovarian cancer is the same, 11 there are many commonalities in -- 12 etiology being the underlying reason. 13 There are many commonalities for the same 14 cancers, including things like cancer 15 stem cells in ovarian cancer, which are 16 now being identified in the literature as 17 a possibility for recurrence of ovarian 18 cancer. 19 So, yes, there are definite 20 commonalities in terms of the induction 21 of ovarian types of cancer. 22 Q. Well, my question was, is it 23 your opinion that the etiologies of each 24 subtype are the same?</p>	<p style="text-align: right;">Page 196</p> <p>1 Remove your microphones. The time 2 is 12:22 p.m. Off the record. 3 (Lunch break.) 4 THE VIDEOGRAPHER: We are 5 back on the record. The time is 6 1:17 p.m. 7 BY MR. HEGARTY: 8 Q. Doctor, we're back on the 9 record. I want to go back to something 10 we talked about at the beginning, that 11 is, the initial call that you had from 12 Ms. Emmel. 13 You mentioned that you 14 reviewed materials between the time of 15 the call and the time that you agreed to 16 serve as an expert witness. Do you 17 recall saying that? 18 A. I do recall. 19 Q. What materials did you 20 review? 21 A. Just random, whatever I got 22 from the -- that came out using keywords 23 of talc, talcum powder, ovarian cancer. 24 Those were my initial keywords.</p>
<p style="text-align: right;">Page 195</p> <p>1 MS. O'DELL: Objection to 2 form. 3 THE WITNESS: I have -- 4 MS. O'DELL: Asked and 5 answered. 6 THE WITNESS: I have no 7 opinion on that. 8 BY MR. HEGARTY: 9 Q. Is it your opinion -- 10 MS. O'DELL: Excuse me. 11 THE WITNESS: Other than 12 what I -- 13 MS. O'DELL: Sorry. 14 THE WITNESS: I'm sorry. 15 MS. O'DELL: You may finish. 16 I didn't mean to cut you off. 17 THE WITNESS: Other than 18 what I've just given. 19 MS. O'DELL: So, Mark, we've 20 been going about an hour and ten 21 minutes, I think. 22 MR. HEGARTY: Okay. Take a 23 break. 24 THE VIDEOGRAPHER: Stand by.</p>	<p style="text-align: right;">Page 197</p> <p>1 Q. Do you recall, sitting here 2 today, any particular articles, whether 3 by author name or by name of that initial 4 search that you did before agreeing to 5 serve as an expert? 6 A. I looked at Ghio, G-I -- 7 G-H-I-O. Did inhalation of talc and 8 airway cells in in vitro study. 9 I also looked at 10 Dr. De Boers and migration of carbon 11 black material. 12 I also looked at Dr. Venter 13 and Iturralde, who talked about 14 administered radiolabeled microspheres. 15 I read Dr. Weiner's -- 16 Weiner's -- Dr. Weiner's publication. I 17 read Dr. Epstein's letter. 18 Q. Is that something that you 19 found on your own? 20 A. Excuse me. It wasn't 21 Dr. Epstein's letter. I'm sorry. I 22 stand corrected. 23 I read the National 24 Toxicology Report, the NTP 1993.</p>



<p style="text-align: right;">Page 198</p> <p>1 Q. Did you do a more expansive 2 literature search and literature review 3 after agreeing to serve as an expert 4 witness? 5 A. Of course. 6 Q. Did you form any opinions, 7 though, from that initial search that you 8 performed? 9 A. My opinion at that time was 10 that there was certainly -- I had a great 11 deal of interest in the topic, that there 12 was certainly enough information and 13 enough evidence to provide -- that was 14 provided by these publications that -- 15 certainly that particles of the size of 16 talc can be -- can be translocated, 17 migrated, and that -- at least from the 18 lung, and so that there was biological 19 plausibility for movement within the 20 body. 21 And I found it convincing 22 that I could -- that I could get involved 23 in this case and that I believe that 24 there was, at that point with only</p>	<p style="text-align: right;">Page 200</p> <p>1 known about the product is consistent 2 with a cause-and-effect relationship." 3 Do you see that where I'm 4 reading? 5 A. I see where you're reading. 6 Q. Where does that definition 7 of biological plausibility come from? 8 A. It is my professional 9 opinion. 10 Q. Is there still biological 11 plausibility if what is known about a 12 substance and a disease is consistent 13 with no cause-and-effect relationship? 14 MS. O'DELL: Object to the 15 form. 16 THE WITNESS: Biological 17 plausibility, to me, as stated 18 here -- and I will state it a 19 different way, is that there is 20 actually literature and 21 information, reliable, sound 22 science that could -- that 23 provides evidence that there is a 24 mechanism or mechanisms as well as</p>
<p style="text-align: right;">Page 199</p> <p>1 superficial literature searching, that 2 there was indeed room for an opinion. 3 And that opinion being that there 4 certainly was information provided that 5 could lead me to provide biological 6 plausibility in that regard. Otherwise, 7 I would not have taken the case. 8 What I would like to say is 9 that I would have done the same thing if 10 you had called me, sir, to answer the 11 question of what my beliefs are and where 12 the science is. 13 Q. If you look at Page 2 again 14 of your expert report. 15 A. Yes, sir. 16 Q. That's Exhibit 2. Again, 17 under the section mandate -- 18 A. Yes. 19 Q. -- and methodology. 20 A. I see it. 21 Q. You say at the end of the 22 second paragraph that, "Biological 23 plausibility does not mean proof of 24 mechanism, but rather whether what is</p>	<p style="text-align: right;">Page 201</p> <p>1 underlying information that could 2 prove the -- although it's not 3 necessary in Hill's criteria, that 4 could be used to prove a causal 5 relationship. 6 And in this case, that 7 talcum powder, in particular 8 Johnson &amp; Johnson talcum powder, 9 can lead to ovarian cancer. 10 BY MR. HEGARTY: 11 Q. Well, do you agree that the 12 finding of biologic plausibility by 13 itself does not mean causation? 14 A. Biological plausibility is 15 used to supplement or to add on. It is 16 actually one of Hill's criteria. One 17 that he listed in his 1962 paper that is 18 not absolutely necessary but does provide 19 compelling evidence. And I do believe 20 that biological plausibility is extremely 21 important, in my personal opinion, in 22 causal relationship. And Hill agrees to 23 that as well. 24 Q. You agree, though, that the</p>



<p style="text-align: right;">Page 202</p> <p>1 other Hill factors should be applied to 2 determine causality, other than -- in 3 addition to biological plausibility? 4 A. Well, I really can't say. 5 Again, I know -- I know of Hill's work, 6 and I know of his groundbreaking 7 publication. But again, I'm here to talk 8 about plausibility, not causation. 9 Q. At the bottom of Page 2 you 10 say as part of your analysis you 11 reviewed, "Depositions and numerous 12 documents, internal memorandum and 13 published and unpublished studies and 14 testing results that I have found in my 15 own searches of documents, documents 16 provided by attorneys, and documents that 17 I requested." That's carrying over to 18 Page 3. 19 Do you see that? 20 A. Toxicological studies. Are 21 we talking about toxicological studies 22 including in vivo and in vitro? 23 Q. No. I'm looking at the very 24 last sentence of the paragraph at the</p>	<p style="text-align: right;">Page 204</p> <p>1 publication of yours, depositions or 2 expert reports in a litigation? 3 A. No. However, there are 4 papers and regulatory -- regulatory 5 documents that are not considered 6 published, published. If you mean 7 peer-reviewed literature, that's one way 8 of publishing. But another way of 9 publishing is also documents that are in 10 a report. 11 And I have used reports in 12 my own publications, if they -- if they 13 are accessible to me. 14 Q. Have you ever in a published 15 scientific article of yours cited to an 16 expert report from a doctor in a 17 litigation? 18 A. I'm sorry. I have to look 19 down at your question. 20 Not that I recall. But 21 that's not to say that I would not. 22 If it was appropriate for 23 the paper that I was writing, I would 24 certainly use it.</p>
<p style="text-align: right;">Page 203</p> <p>1 bottom of Page 2, carrying over to the 2 top of Page 3? 3 A. In addition, I've reviewed 4 depositions and numerous documents 5 internal memorandum and published and 6 unpublished studies and testing results 7 that I have found in my own searches. 8 Q. Correct. In any scientific 9 analysis that you have done, have you 10 ever included as part of that analysis 11 documents provided by attorneys? 12 A. In my -- when I publish, I 13 look at all relevant information that I 14 have access to. It's about the science. 15 Q. Not my question. My 16 question is in any prior work that you 17 have done where you have published an 18 article, have you included in the review 19 for purposes of publishing that article, 20 documents provided by lawyers? 21 A. No, sir, not to my 22 knowledge. 23 Q. Have you ever included as 24 materials that you have reviewed for any</p>	<p style="text-align: right;">Page 205</p> <p>1 Q. Can you identify any 2 scientific group -- strike that. 3 Before I ask you about 4 causation, now I want to ask you about 5 biological plausibility. Can you cite 6 for me any scientific group, body, or 7 even paper that has concluded that there 8 is biological plausibility between 9 perineal talc use and ovarian cancer? 10 A. Mm-hmm-hmm. If you look at 11 -- I don't know what exhibit it is. But 12 it is the Health Canada report. And -- 13 Canadian U.S. EPA. And if you look at 14 Taher's paper, systemic review and 15 meta-analysis, in both of those -- okay. 16 So the environmental -- Health Canada and 17 Canadian EPA, they put out this -- this 18 document, which is an assessment, a 19 screening assessment document, to look at 20 biological plausibility as well as the 21 other epidemiological literature. 22 And they do speak to the 23 causation and they do speak to biological 24 plausibility of talc and its association</p>

<p style="text-align: right;">Page 206</p> <p>1 or talc and it's causation for ovarian 2 cancer. So they do in that document. 3 The systematic review and 4 meta-analysis 2018 of Taher also speaks 5 of it and reviews the 30 -- I think it's 6 30 -- 30 studies, of which there are 26 7 case-controls and -- studies, and I think 8 four cohort studies. And they do also 9 conclude that, by looking at the 10 meta-analysis, that there are -- that 11 there is causation associated -- that 12 there is causation for talcum powder and 13 ovarian cancer. 14 Q. Actually, Doctor, both 15 documents to which you reference conclude 16 only that perineal use of talcum powder 17 is a possible cause of ovarian cancer, 18 correct? 19 MS. O'DELL: Object to the 20 form. 21 THE WITNESS: They state 22 cause. And if you give me a 23 moment, I can look for it, within 24 the document. So I'm looking at</p>	<p style="text-align: right;">Page 208</p> <p>1 MS. O'DELL: It's Exhibit 9. 2 BY MR. HEGARTY: 3 Q. If you would look -- do you 4 have the Taher review? 5 A. I do. 6 Q. What's that marked as? 7 A. That is Exhibit 10. 8 Q. Exhibit 10? 9 A. Based on your yellow mark, 10 yes. 11 Q. If you look at the abstract 12 under the conclusion section, it 13 concludes that perineal use of talcum 14 powder is a possible cause of human 15 ovarian cancer. 16 Do you see that? 17 A. Excuse me. I dropped my 18 microphone. 19 Okay. Please repeat your 20 question. Your comment. 21 Q. Second page under the 22 conclusion section. The conclusion of 23 the Taher article is, "The perineal use 24 of talc powder is a possible cause of</p>
<p style="text-align: right;">Page 207</p> <p>1 the Health Canada document. 2 Meta -- page -- I'm sorry. 3 Roman Numeral III, "Meta-analysis 4 of the available human studies in 5 the peer-reviewed literature 6 indicate a consistent and 7 statistically significant positive 8 association between perineal 9 exposure to talc and ovarian 10 cancer. Further available data 11 are indicative of causal effect." 12 BY MR. HEGARTY: 13 Q. Okay. What is their 14 ultimate conclusion? 15 A. This is part of their 16 conclusion. 17 Q. Can I look at that document? 18 A. Absolutely. 19 MR. TISI: Is this marked as 20 an exhibit, Mark? 21 MR. HEGARTY: Yes. 22 MR. FINDEIS: Sorry, which 23 number is it marked? So the 24 record is clear.</p>	<p style="text-align: right;">Page 209</p> <p>1 human ovarian cancer," correct? 2 MS. O'DELL: Objection to 3 form. 4 THE WITNESS: I see that 5 conclusion sentence. 6 BY MR. HEGARTY: 7 Q. Nowhere in here do they say 8 that talcum powder causes ovarian cancer, 9 correct? 10 MS. O'DELL: Objection to 11 form. 12 THE WITNESS: If you're 13 looking for a specific sentence, 14 allow me to review. 15 BY MR. HEGARTY: 16 Q. Well, are you going to need 17 to review the entirety of the paper? 18 A. I may. 19 Q. Okay. Well, I can't -- we 20 don't have time for you to review the 21 entirety of the paper so I'll withdraw 22 the question. If you need to review the 23 entirety of the paper. 24 Can you cite here without</p>

<p style="text-align: right;">Page 210</p> <p>1 reviewing it anywhere where they say 2 talcum powder causes ovarian cancer? 3 A. I cannot -- 4 MS. O'DELL: Excuse me. And 5 you're referring specifically to 6 Exhibit 10? 7 MR. HEGARTY: Correct. 8 MS. O'DELL: The Taher 9 paper? 10 THE WITNESS: I can't say it 11 without looking at the paper. 12 BY MR. HEGARTY: 13 Q. Has the Taher paper been 14 peer reviewed? 15 A. The Taher paper has -- is a 16 document that, yes, has been peer 17 reviewed. To my knowledge. 18 Q. Okay. What publication peer 19 reviewed that document? 20 A. Excuse me? 21 Q. Who peer reviewed that 22 document? 23 A. I have -- I have no 24 knowledge of that.</p>	<p style="text-align: right;">Page 212</p> <p>1 letter, information. And I specifically 2 asked that same question. 3 Q. Now, are you relying on the 4 fact it's been peer reviewed for your 5 opinions in this case? 6 A. I'm relying on the science. 7 Q. Well, are you relying on 8 whether -- on what plaintiffs' counsel 9 told you as far as whether it's been peer 10 reviewed? 11 MS. O'DELL: Object to the 12 form. 13 THE WITNESS: That is what 14 I'm trying to look, whether there 15 is an acknowledgment and whether 16 there is a statement within it 17 which says it's peer reviewed. 18 It -- it's stated that in 19 order for this -- in order for a 20 document such as this, and again 21 it depends on what you mean by 22 peer review, whether it's a 23 community or whether it's the 24 government. The government has</p>
<p style="text-align: right;">Page 211</p> <p>1 Q. How do you know it's been 2 peer reviewed? 3 A. The -- the plaintiff lawyers 4 have shown me a document, a cover letter, 5 information, I specifically asked that 6 question of them. 7 Q. And are you relying on what 8 they provided to you for purposes of 9 saying it's peer reviewed? 10 A. Please allow me to -- I'm 11 going to take a look into the document 12 again. There may be evidence that's in 13 the document which says it's peer 14 reviewed. 15 Q. Doctor, what are you looking 16 at for purposes of peer review? I asked 17 you -- 18 A. I'm looking to see -- sorry, 19 please finish your question. 20 Q. I asked you how do you know 21 it's been peer reviewed. 22 A. And I stated that the 23 plaintiff lawyer -- the plaintiffs' 24 lawyers have shown me a document, a cover</p>	<p style="text-align: right;">Page 213</p> <p>1 looked at this, and they were 2 submitted by Health Canada, and as 3 of now it's been submitted for 4 peer review, but it was looked at 5 by the Health Canada and by EPA. 6 BY MR. HEGARTY: 7 Q. What document were you shown 8 that shows it's been peer reviewed? 9 A. On the first page, 10 Exhibit 10, materials submitted to Health 11 Canada, materials submitted to journal 12 for peer review. 13 Q. So it's not been peer 14 reviewed? 15 A. To my knowledge, it has been 16 peer reviewed. And again I'm relying on 17 plaintiffs' attorney with that 18 information. 19 Q. Have you ever cited in a 20 scientific article of yours a publication 21 that's not been peer reviewed? 22 A. All the time. 23 Q. So that's something that -- 24 that you have done as part of your</p>

<p style="text-align: right;">Page 214</p> <p>1 methodology?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 THE WITNESS: It's</p> <p>5 something -- if there is -- based</p> <p>6 on my opinion of the study design,</p> <p>7 the information, the science, if</p> <p>8 it -- if it needs to be stated, if</p> <p>9 the science needs to be out there,</p> <p>10 then I have cited numerous times</p> <p>11 unpublished information.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Do you understand that for</p> <p>14 purposes -- that the -- strike that.</p> <p>15 Do you understand that the</p> <p>16 Health Canada risk assessment is a --</p> <p>17 only a draft assessment at this point in</p> <p>18 time?</p> <p>19 A. It is going to be reviewed,</p> <p>20 yes. I understand that it -- it is a</p> <p>21 draft assessment. I also understand that</p> <p>22 it has gone through scrutiny by both</p> <p>23 Health Canada and Canadian EPA.</p> <p>24 Q. Do you understand that</p>	<p style="text-align: right;">Page 216</p> <p>1 or paper that has concluded that there is</p> <p>2 biologic plausibility between talcum</p> <p>3 powder use and ovarian cancer?</p> <p>4 A. Biological plausibility, in</p> <p>5 my case, and for my review and for my</p> <p>6 report, I'm looking at the inflammation</p> <p>7 as a biological plausibility.</p> <p>8 There is data going back and</p> <p>9 scientific reviews and publications going</p> <p>10 back to the '60s which implicate</p> <p>11 inflammation as a biological mediator for</p> <p>12 cancer.</p> <p>13 Q. Doctor, listen to my</p> <p>14 question. My question is very specific</p> <p>15 to talc and the biologic plausibility</p> <p>16 between talc and ovarian cancer.</p> <p>17 Can you cite for me, besides</p> <p>18 the Canadian documents you cited, any</p> <p>19 scientific group, body or organization</p> <p>20 that has concluded that there is biologic</p> <p>21 plausibility between talcum powder use</p> <p>22 and ovarian cancer?</p> <p>23 A. There is biological</p> <p>24 plausibility and there is evidence that</p>
<p style="text-align: right;">Page 215</p> <p>1 there's a comment period that's going on</p> <p>2 right now?</p> <p>3 A. I understand that, yes.</p> <p>4 Q. And that this is not a final</p> <p>5 statement?</p> <p>6 A. Final statement. In any</p> <p>7 document, any regulatory document that --</p> <p>8 those that are put out by the National</p> <p>9 Academy of Science, whatever document</p> <p>10 you're using, there's always a peer</p> <p>11 review or comment period.</p> <p>12 In my opinion, in my</p> <p>13 professional career, documents do not</p> <p>14 change that drastically based upon the</p> <p>15 comments that come in. Based upon</p> <p>16 National Academy of Science, and the</p> <p>17 National Toxicology Program. There are</p> <p>18 usually not -- there are no -- by the</p> <p>19 time it reaches this point, there are no</p> <p>20 substantive comments that allow for</p> <p>21 extensive changes.</p> <p>22 Q. Other than the Canadian</p> <p>23 documents you just cited, can you cite</p> <p>24 for me any other scientific group, body</p>	<p style="text-align: right;">Page 217</p> <p>1 in Step 1, that talc causes inflammation.</p> <p>2 In Step 2, that inflammation is a</p> <p>3 well-known and well-established factor</p> <p>4 in -- in cancer.</p> <p>5 Q. Doctor, you are not</p> <p>6 answering my question. Do you want to</p> <p>7 read my question? My question is very</p> <p>8 specific.</p> <p>9 Can you cite for me any</p> <p>10 scientific body or group or organization,</p> <p>11 other than what you say the Canadian</p> <p>12 group or groups did, that has concluded</p> <p>13 that there is biologic plausibility</p> <p>14 between talcum powder use and ovarian</p> <p>15 cancer?</p> <p>16 MS. O'DELL: Objection.</p> <p>17 Objection to the question. Asked</p> <p>18 and answered.</p> <p>19 THE WITNESS: I stand by my</p> <p>20 answer. That, again, talc can</p> <p>21 cause inflammation. It's well</p> <p>22 known. And inflammation is an</p> <p>23 underpinning for cancer.</p> <p>24 BY MR. HEGARTY:</p>

<p style="text-align: right;">Page 218</p> <p>1 Q. Okay. Cite for me any 2 scientific group, body or organization 3 who has said that. 4 A. That is throughout 5 literature. If you go back to 1960 and 6 talk about the Vertel and the role of 7 inflammation in cancer, and numerous 8 other publications since that, if you 9 look at -- talc is used to induce 10 pleurodesis because of its inflammatory 11 responsiveness. 12 Q. Doctor, you still are not 13 answering my question. My question is 14 name a scientific body, organization or 15 group who has concluded, as you have 16 done, or you say you do in your paper, 17 that there is biologic plausibility 18 between talc and ovarian cancer. 19 MS. O'DELL: Objection to 20 the form. 21 THE WITNESS: I gave you -- 22 BY MR. HEGARTY: 23 Q. Cite for me the groups. 24 MS. O'DELL: Excuse me. Let</p>	<p style="text-align: right;">Page 220</p> <p>1 biological mechanism that everyone 2 including the National Toxicology, the 3 IARC, the National Academy of Science, 4 EPA, all recognize. 5 Q. Cite for me any group. 6 Again, you are not answering my question. 7 My answer -- 8 A. Okay. 9 Q. -- my question is other than 10 the Canadian groups you've cited, cite 11 for me any group by name who has reached 12 the same opinion as you about biologic 13 plausibility. 14 MS. O'DELL: Objection to 15 form. Other than those she just 16 listed in her last answer? 17 MR. HEGARTY: Well, she 18 didn't list any. I think the 19 record shows that. 20 MS. O'DELL: Yes, she did. 21 MR. HEGARTY: Which ones did 22 she list? 23 MS. O'DELL: NTP. IARC. 24 MR. HEGARTY: Okay. Are you</p>
<p style="text-align: right;">Page 219</p> <p>1 me -- objection to form. Asked 2 and answered. The doctor has 3 answered your question. You may 4 not like the answer, but she's 5 answered it. 6 BY MR. HEGARTY: 7 Q. Cite for me the groups by 8 name. 9 MS. O'DELL: Objection to 10 form. 11 THE WITNESS: Ask the 12 question again? 13 BY MR. HEGARTY: 14 Q. Cite for me any name of any 15 group that has reached the same opinion 16 as you? 17 A. Besides the Health Canada? 18 Q. Correct. 19 A. There are -- I -- you're 20 asking for something that is not -- I'm 21 answering the question by telling you 22 that you have talc which is an 23 inflamagogue, and you have talc and its 24 relationship with cancer. And that is a</p>	<p style="text-align: right;">Page 221</p> <p>1 going on the record to say NTP has 2 concluded that talcum powder use 3 is a biologic 4 plausibility/plausible cause of 5 ovarian cancer? 6 THE WITNESS: We're not -- 7 MS. O'DELL: She was talking 8 about inflammation and cancer, as 9 you well know. 10 MR. HEGARTY: Right, which 11 is why she's not answering my 12 question. 13 MS. O'DELL: No, no. Your 14 question was not in relation to 15 specific talc and biologic 16 plausibility. 17 So the doctor has answered 18 your question. 19 MR. HEGARTY: I think the 20 record will reflect otherwise. 21 BY MR. HEGARTY: 22 Q. Doctor, listen to my 23 question -- 24 MS. O'DELL: No, it will</p>



<p style="text-align: right;">Page 222</p> <p>1 not. 2 BY MR. HEGARTY: 3 Q. Listen to my question. 4 Can you cite for me any 5 group besides the Canadian group who has 6 concluded that there is biologic 7 plausibility, who has made a statement 8 that there is biologic plausibility 9 between talcum powder use and ovarian 10 cancer? 11 A. I'm telling -- as I said 12 before, you're leaving out the word 13 "inflammation." 14 Q. Doctor, you -- you need to 15 answer the question I ask. 16 A. I -- I -- 17 Q. Your counsel can come back 18 and ask you that question. I under -- I 19 want to know the name of any organization 20 by name who has concluded that there is 21 biologic plausibility between perineal 22 use of talc and ovarian cancer. 23 A. Anyone -- 24 MS. O'DELL: Other than the</p>	<p style="text-align: right;">Page 224</p> <p>1 I've shown, whether it's in air pollution 2 or whether it's in tobacco products or 3 nicotine products or World Trade Center 4 dust or metal inhalation or nanoparticle 5 inhalation. They all give biological 6 plausibility statements for the 7 observations that have been found in my 8 laboratory. 9 Q. Where have you ever 10 published step-by-step methodology for 11 how you go about determining whether 12 there is biological plausibility between 13 a substance and a disease? 14 A. I use my professional 15 judgment. 16 Q. Have you ever published that 17 professional judgment? 18 MS. O'DELL: Objection to 19 form. 20 THE WITNESS: I don't think 21 that would be publishable 22 material. 23 BY MR. HEGARTY: 24 Q. In the end, Doctor, your</p>
<p style="text-align: right;">Page 223</p> <p>1 ones she -- she's listed. 2 THE WITNESS: Anyone that 3 you say -- any -- I'll do it 4 again. National Toxicology 5 Program. IARC. Institute of 6 Medicine. 7 They may not say the 8 sentence you are -- you are 9 implying or you're stating. But 10 they all show that talc has -- 11 produces inflammation. 12 I don't think that the -- I 13 think that's a very common 14 knowledge that talc or talcum 15 powder products does produce 16 inflammation. 17 BY MR. HEGARTY: 18 Q. Doctor, where have you ever 19 published a methodology for determining 20 whether there is biologic plausibility 21 between an exposure and a disease? 22 A. Almost every paper that I 23 have in my CV talks about the biological 24 plausibility for the observations that</p>	<p style="text-align: right;">Page 225</p> <p>1 report is your subjective take on the 2 studies, correct? 3 MS. O'DELL: Objection to 4 form. 5 BY MR. HEGARTY: 6 Q. I mean, you don't speak for 7 any scientific group, do you? 8 A. I'm an expert toxicologist, 9 recognized clearly by the Society of 10 Toxicology as an expert in my field. 11 And -- I'm sorry. I -- 12 Q. Well, is your report 13 speaking for the society -- 14 MS. O'DELL: Excuse me. 15 BY MR. HEGARTY: 16 Q. Is your report speaking for 17 the Society of Toxicology? 18 MS. O'DELL: She wasn't 19 finished. 20 THE WITNESS: I wasn't. I 21 was -- 22 MS. O'DELL: She wasn't 23 finished. Please let the witness 24 finish.</p>



<p style="text-align: right;">Page 226</p> <p>1 MR. HEGARTY: I'll withdraw 2 the question. 3 BY MR. HEGARTY: 4 Q. Doctor, do you speak for the 5 Society of Toxicology for purposes of 6 your opinions in your report? 7 A. No. 8 Q. Do you speak for any 9 society, any toxicology society -- 10 society for purposes of your opinions? 11 A. You didn't let me finish my 12 answer. 13 I do not speak for the 14 society of toxicology. But I am a 15 recognized toxicology expert, recognized 16 by the Society of Toxicology as an 17 expert. And I have written this report 18 based upon literature, scientific 19 evidence, and my professional judgment. 20 Q. What society has recognized 21 you as an expert in talc and ovarian 22 cancer? 23 A. I'm recognized as expert in 24 toxicology.</p>	<p style="text-align: right;">Page 228</p> <p>1 form. 2 You can answer. 3 THE WITNESS: This is my 4 opinion based upon my systematic 5 review of all the scientific 6 literature. And they -- by the 7 nature of hiring me, they have 8 approved of my -- my opinions. 9 Maybe not specifically in this 10 case, but they would not have 11 hired me or kept me for 35 years 12 if they did not agree that I was a 13 well-known established 14 toxicologist whose opinions are 15 based in my professional judgment. 16 BY MR. HEGARTY: 17 Q. Did you tell the university, 18 New York University, of your opinions in 19 this case? 20 A. I did not. 21 Q. Have you told them that 22 you're an expert witness for plaintiffs 23 in this litigation? 24 A. I have, yes.</p>
<p style="text-align: right;">Page 227</p> <p>1 Q. What society has -- 2 A. Society of Toxicology. 3 Q. Has the Society of 4 Toxicology recognized you as an expert in 5 talc and ovarian cancer? 6 MS. O'DELL: Objection to 7 form. 8 THE WITNESS: I was 9 recognized as an expert in tox and 10 ovarian cancer and talc by the 11 very basis that I'm sitting here. 12 BY MR. HEGARTY: 13 Q. You don't speak for your 14 university, do you? 15 A. No one -- no one speaks 16 directly for the university. But what we 17 say, we understand our paychecks come 18 from the university, and we follow within 19 the university and the medical school 20 guidelines. 21 Q. Are your opinions in this 22 case the opinions of New York University? 23 A. This is my -- 24 MS. O'DELL: Objection to</p>	<p style="text-align: right;">Page 229</p> <p>1 Q. Have you reported, in your 2 financial disclosure, the money that 3 you've made in this litigation? 4 A. Up until -- we are asked 5 that question -- we have to fill out 6 reports on transparency and conflicts of 7 interest. And I think the last time I 8 did it was in November of 2018. And I 9 reported up to that time, yes. We are 10 required to do that and, yes, I am 11 completely transparent. 12 So any money that I've made 13 since November, or since the filing of 14 the confidentiality agreement has not 15 been reported but will be coming in March 16 or April. 17 Q. You don't speak for any 18 journal for the purpose of your report, 19 do you? 20 A. For purposes of this report 21 I do not speak for journals. But I do 22 speak for journals because I'm an editor, 23 I'm an associate editor and on the 24 editorial boards for numerous</p>

<p style="text-align: right;">Page 230</p> <p>1 environmental health and toxicology 2 journals. 3 Q. At the top of Page 3 of your 4 report, you say in the first full 5 paragraph that you considered the studies 6 that did not find an increased risk of 7 ovarian cancer with talc use. 8 Do you see that? 9 MS. O'DELL: What page are 10 you on? I'm sorry. 11 BY MR. HEGARTY: 12 Q. Page 3. 13 A. I'm sorry. I know we're on 14 Page 3. 15 Q. The first full paragraph. 16 A. My opinions below? 17 Q. The first full paragraph. 18 A. My opinions below. "My 19 opinions below" -- 20 Q. At the very -- at the very 21 end, you say you considered those studies 22 that did not find an increased risk. 23 Do you see that? 24 A. I'm reading it.</p>	<p style="text-align: right;">Page 232</p> <p>1 several, there are case-control 2 studies as well as cohort studies 3 which showed negative 4 associations. 5 BY MR. HEGARTY: 6 Q. You did not cite any of 7 those in your report, though, did you? 8 A. No. What I said -- I'm 9 sorry. Let me try and make it clear. 10 Yes, those meta-analyses 11 were included in the report or -- I need 12 to find the names. Systematic review 13 that I cited was 14 P-E-N-N-I-N-K-I-L-A-M-P-I 2018. And that 15 was a meta-analysis which reviewed the 16 epidemiological case-control and cohort 17 studies which showed that there were 18 studies that had negative associations. 19 Q. Is that the only reference 20 that you included in your report, to 21 studies that did not find an increased 22 risk of ovarian cancer with talc use? 23 MS. O'DELL: Object to the 24 form.</p>
<p style="text-align: right;">Page 231</p> <p>1 Yes, okay. You were reading 2 in the middle of the sentence. "To my 3 knowledge, I considered and evaluated the 4 majority of all available relevant 5 studies in the process of evaluating the 6 literature, including those that reported 7 an elevated risk of ovarian cancer with 8 exposure to talc and those where other 9 chemicals were reported within talc-based 10 body powders, including those that did 11 not find an increased risk." Yes. 12 Q. You did not cite a single 13 paper in your report that did not find an 14 increased risk of ovarian cancer with 15 talc use, did you? 16 MS. O'DELL: Objection to 17 form. 18 THE WITNESS: There were -- 19 in reading over the meta-analysis 20 of -- I'm sorry, I'm probably 21 going to get his name wrong -- 22 Penninkilampi. 23 In reading over the 24 meta-analysis of several -- from</p>	<p style="text-align: right;">Page 233</p> <p>1 THE WITNESS: No. No. 2 MS. O'DELL: Excuse me. 3 Object to the form. 4 THE WITNESS: No. Under the 5 animal models on Page 13, there 6 were -- with rats that were 7 exposed by the peritoneum -- 8 perineum, sorry, to either talc or 9 no treatment. And while they did 10 find inflammatory response -- 11 again, going back to my biological 12 plausibility -- they did not find 13 neoplasms. 14 BY MR. HEGARTY: 15 Q. So that would be an example 16 of a study that did not show an increased 17 risk of ovarian cancer with talc use, 18 correct? 19 A. That is -- 20 MS. O'DELL: Object to the 21 form. 22 Go ahead. 23 BY MR. HEGARTY: 24 Q. Is that correct?</p>

<p style="text-align: right;">Page 234</p> <p>1 A. Sorry. Repeat the question. 2 Repeat the question, please. 3 Q. Sure. So that is an example 4 of a study that, in your opinion, does 5 not show an increased risk of ovarian 6 cancer with talc use? 7 MS. O'DELL: Objection to 8 form. Go ahead. Sorry. 9 THE WITNESS: Sorry. 10 This is a study which shows 11 biological plausibility by showing 12 that there is a foreign body 13 reaction and inflammatory 14 response. However, it does not 15 show that there was any change in 16 neoplasm -- or any induction of 17 neoplasms or cancer. 18 BY MR. HEGARTY: 19 Q. Did you read any cell study 20 that showed that talc is not cytotoxic? 21 A. Can you please explain what 22 you mean by cytotoxic? I want to answer 23 the question as you understand it. 24 Q. What is your definition of</p>	<p style="text-align: right;">Page 236</p> <p>1 showing that talc was not toxic to cells? 2 A. I read comparison studies. 3 Let me please find that, the exact names. 4 Q. Let me withdraw the 5 question. Doctor, in your opinion is 6 talc mutagenic? 7 A. How do you define 8 "mutagenic"? 9 Q. Doctor, what's your -- 10 mutagenic is mutation to genes. Does 11 talc mutate genes? 12 A. Talc leads to changes in 13 gene expression which can be inferred as 14 a mutation. However, when you talk about 15 mutation, you have many different 16 mechanisms of mutation. Mutation can 17 occur as a result of a genotoxic or 18 direct impact on DNA, or it can occur as 19 a result of changes in the epigenome, 20 which leads to changes in expression of 21 the gene. 22 Q. Does talc directly mutate 23 genes? 24 A. Talc has been shown to</p>
<p style="text-align: right;">Page 235</p> <p>1 cytotoxicity? 2 A. I'd like to answer the 3 question that you're asking me. 4 Q. I'm asking you your 5 definition. The way a deposition works 6 is I ask you questions. You don't ask me 7 questions. 8 MS. O'DELL: Don't be -- be 9 courteous to the witness, please. 10 MR. HEGARTY: I am. 11 THE WITNESS: I appreciate 12 that. I just want to, as a 13 toxicologist, the word 14 "cytotoxicity" carries many 15 meanings. 16 BY MR. HEGARTY: 17 Q. What is your definition -- 18 basic definition of cytotoxicity? 19 A. There are many meanings. 20 Cytotoxicity taken literally meaning 21 toxicity to a cell. Cyto, cell; 22 toxicity, toxic. However, toxicity can 23 be measured by numerous endpoints. 24 Q. Did you read any studies</p>	<p style="text-align: right;">Page 237</p> <p>1 cause -- to cause changes in particular 2 enzymes in the gene expression. So a 3 mutation -- yes, it has been -- it has 4 been shown for mutation. But I just 5 need -- I need the attorneys to 6 understand that there are many ways to 7 mutate a cell, not only can you do it by 8 chemical agent, but you can also -- it 9 occurs with aging. 10 So you do not need -- I'm 11 sorry. You do not need genotoxicity to 12 produce mutagenesis. 13 Now, if you look at many 14 different assays such as the Ames assay 15 which uses bacteria to assess 16 mutagenicity, you are not going to see 17 that as a possibility for talc because 18 the bacteria cannot engulf the particle 19 and the particle needs to be ingested in 20 order to show mutagenesis. 21 Q. Doctor, on Page 4 above your 22 section "fibrous talc" -- 23 A. I see it. 24 Q. -- you refer to particle</p>

<p style="text-align: right;">Page 238</p> <p>1 size for talc.  2 A. That's correct.  3 Q. Is knowing particle size  4 part of your methodology for your  5 opinions in your report?  6 A. I'm sorry. I don't  7 understand what you mean by was it part  8 of my methodology.  9 Q. Well, what is the threshold  10 size of a talc particle to establish  11 biologic plausibility?  12 MS. O'DELL: Object to form.  13 THE WITNESS: I don't think  14 you can answer that question.  15 In -- let me say this.  16 In doing my methodology and  17 accumulating literature, I -- as I  18 said, I binned or siloed  19 individual things.  20 And one of the silos and one  21 of the categories that I -- that I  22 wanted to read was size. Size  23 makes a very big difference in  24 particles, and for example, if the</p>	<p style="text-align: right;">Page 240</p> <p>1 THE WITNESS: Establishing  2 my biological plausibility was --  3 was travel -- is traveling through  4 migration and the ability for a --  5 for the powder to migrate or the  6 constituents to migrate. And --  7 and also the ability to be  8 inflammatory.  9 BY MR. HEGARTY:  10 Q. Well, what size -- what size  11 of particle -- what size must the  12 particle be to cause inflammation that  13 leads to ovarian cancer?  14 A. Particles of any --  15 MS. O'DELL: Objection to  16 form. You may go.  17 THE WITNESS: Particles of  18 any size can cause inflammation.  19 BY MR. HEGARTY:  20 Q. What about talc particles,  21 what size of talc particle must there be  22 to cause inflammation?  23 A. Talc particles of any size  24 can cause inflammation.</p>
<p style="text-align: right;">Page 239</p> <p>1 particle is greater than  2 10 microns it's going to be what  3 we call inhalable as opposed to  4 respirable. So where a particle  5 can go in terms of, and now I'm  6 using the lung as an example,  7 where the particle can go will  8 depend upon its size and how long  9 it will remain in a tissue.  10 So in my bins, in my silos  11 were -- certainly size was a  12 parameter.  13 BY MR. HEGARTY:  14 Q. And what is the threshold  15 size of a talc particle to establish  16 biologic plausibility between talc and  17 ovarian cancer?  18 MS. O'DELL: Objection to  19 the form.  20 BY MR. HEGARTY:  21 Q. What size must the particle  22 be?  23 MS. O'DELL: Objection to  24 form.</p>	<p style="text-align: right;">Page 241</p> <p>1 Q. And is there --  2 A. However, there are  3 differences, from reading the literature,  4 that indicates that the smaller the  5 particle the greater the inflammation.  6 And that's universally  7 known.  8 Q. Was part of your analysis,  9 did you -- did that involve investigating  10 biologic plausibility as it relates to  11 particle size?  12 A. That was -- that was part of  13 my reading and part of my -- my thought  14 process, my gathering of information,  15 yes.  16 Q. And is there a certain size  17 of particle necessary to establish  18 biologic plausibility under your opinion?  19 MS. O'DELL: Objection.  20 Asked and answered.  21 THE WITNESS: Well, I do  22 think I answered that question.  23 But again there's really --  24 apart -- it is not just particle</p>

<p style="text-align: right;">Page 242</p> <p>1 size which is important in 2 producing an inflammation. It is 3 many parameters. And so there was 4 no one size or one cutoff that 5 induces inflammation or does not. 6 It's chemical composition, it's 7 shape of the particle, it's 8 bioavailability of the particle. 9 BY MR. HEGARTY: 10 Q. Can you cite for me the -- 11 the particle size for Johnson's Baby 12 Powder over the last 120 years? 13 MS. O'DELL: Objection to 14 form. 15 THE WITNESS: I'm not sure I 16 can cite it over the last 17 120 years. But I can tell you 18 from the information in the 19 documents that I -- that I 20 reviewed, that particle size goes 21 from above 50 microns, 22 micrometers, microns, down to 23 0.3 micron with an average size of 24 10.5 to 11.5 depending on the</p>	<p style="text-align: right;">Page 244</p> <p>1 Q. Well, fibrous talc is only 2 talc that grows in an -- in an 3 asbestiform habit, correct? 4 A. Fibrous talc refers to the 5 shape and the longitudinal direction of 6 the fibers. That's what fibrous talc is, 7 and asbestiform refers to the same 8 longitudinal pattern of the particular 9 fibrils and -- to form a bundle or to 10 form a fiber. 11 Q. So you don't agree that 12 fibrous talc is only talc that grows in 13 an asbestiform habit? 14 MS. O'DELL: Objection to 15 form. 16 THE WITNESS: Fibrous talc 17 by its very nature is saying that 18 it grows in an asbestiform-like 19 phenotype or asbestiform-like 20 morphology. That's the nature of 21 asbestiform. 22 Asbestiform is a form. 23 BY MR. HEGARTY: 24 Q. You state in the middle</p>
<p style="text-align: right;">Page 243</p> <p>1 document that you read. So an 2 average or median size. 3 BY MR. HEGARTY: 4 Q. So did you -- did you do 5 analysis for biologic plausibility 6 purposes of every size of talc particle? 7 MS. O'DELL: Objection. 8 Asked and answered. 9 THE WITNESS: Did I do 10 analysis -- I -- no, as I said, I 11 gave you the size of the -- of the 12 talcum that was reviewed, that I 13 reviewed within the documents. 14 BY MR. HEGARTY: 15 Q. You, on -- on page -- strike 16 that. 17 Under the section Fibrous 18 Talc, you say that -- is it your 19 testimony that -- strike that. 20 Is it your opinion that 21 asbestiform talc is also called fibrous 22 talc? 23 A. Talc and asbestos are -- are 24 different minerals.</p>	<p style="text-align: right;">Page 245</p> <p>1 paragraph, in that section, that talc in 2 its fibrous form has been classified by 3 IARC as Group I, a known carcinogen. 4 That's not correct, is it? 5 MS. O'DELL: Objection to 6 form. 7 THE WITNESS: I'm sorry, 8 could you say again? 9 BY MR. HEGARTY: 10 Q. Well, you agree that only 11 talc containing asbestiform fibers has 12 been classified as Group I by IARC, 13 correct? 14 A. Are you referring to in 2010 15 IARC expanded or -- I'm sorry, in its 16 fibrous form, talc has been classified as 17 a Group I known carcinogen? 18 Q. Correct. 19 A. Asbestiform fibers have been 20 listed by IARC as a carcinogen. 21 Q. A talc containing 22 asbestiform fibers is the only form of 23 talc that's been designated as a class -- 24 as a Category I carcinogen by IARC,</p>



<p style="text-align: right;">Page 246</p> <p>1 correct?</p> <p>2 A. It's not the only one that's</p> <p>3 been associated with it, but for the</p> <p>4 purpose of my report that I put down,</p> <p>5 it's the asbestiform that has been</p> <p>6 classified by the IARC.</p> <p>7 Q. Well, it's talc containing</p> <p>8 asbestiform fibers, correct?</p> <p>9 MS. O'DELL: Objection to</p> <p>10 form.</p> <p>11 THE WITNESS: It's -- it's</p> <p>12 fibrous talc.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Is that -- that's your --</p> <p>15 your -- it's your opinion that IARC's</p> <p>16 designation in 2012 is of asbestiform</p> <p>17 talc?</p> <p>18 A. Their designations is</p> <p>19 form -- is talc fibers, which are</p> <p>20 asbestiform in nature.</p> <p>21 Q. Do you cite to any published</p> <p>22 data in the medical literature that</p> <p>23 asbestiform talc has been found in</p> <p>24 Johnson's Baby Powder?</p>	<p style="text-align: right;">Page 248</p> <p>1 Can you cite for me any published medical</p> <p>2 literature finding asbestiform talc in</p> <p>3 Johnson's Baby Powder?</p> <p>4 A. Page 6 of my report speaks</p> <p>5 of the Crowley report, and that the fiber</p> <p>6 content ranged from 8 percent to</p> <p>7 30 percent. And that Pooley and Rohl</p> <p>8 analyzed 27 talc powders and detected</p> <p>9 tremolite fibers in three samples.</p> <p>10 Q. Is it your testimony that</p> <p>11 Crowley -- Crowley's article refers to</p> <p>12 Johnson's Baby Powder?</p> <p>13 A. I would have to see the</p> <p>14 article.</p> <p>15 Q. How about Pooley and Rohl,</p> <p>16 do they refer to Johnson's Baby Powder?</p> <p>17 A. I would have to see the</p> <p>18 article.</p> <p>19 Q. In the end, for purposes of</p> <p>20 your opinion as to asbestos and talc,</p> <p>21 you're relying on the report of Longo and</p> <p>22 Rigler, correct?</p> <p>23 MS. O'DELL: Objection to</p> <p>24 form.</p>
<p style="text-align: right;">Page 247</p> <p>1 A. I'm sorry.</p> <p>2 You cite -- do you cite to</p> <p>3 any published data in the medical</p> <p>4 literature that asbestiform talc...</p> <p>5 The documents, the published</p> <p>6 documents within Johnson &amp; Johnson and</p> <p>7 the Longo report, Longo's 2017, as well</p> <p>8 as 2018 supplement from December, shows</p> <p>9 asbestiform fibers.</p> <p>10 Q. My question though is can</p> <p>11 you cite any data published in the</p> <p>12 medical literature that has found</p> <p>13 asbestiform talc in Johnson's Baby</p> <p>14 Powder?</p> <p>15 A. I thought I just did in</p> <p>16 terms of the Longo report.</p> <p>17 Q. Is the Longo report</p> <p>18 published in the medical literature?</p> <p>19 A. It's -- I'm not sure whether</p> <p>20 it's accessible in the medical -- medical</p> <p>21 literature at this point. But I'm sure</p> <p>22 it could be gathered.</p> <p>23 Q. My -- my question is solely</p> <p>24 as to the published medical literature.</p>	<p style="text-align: right;">Page 249</p> <p>1 THE WITNESS: No, I rely on</p> <p>2 the scientific literature, not on</p> <p>3 any one paper. I used weight of</p> <p>4 evidence to come to my opinion.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Did you include in your</p> <p>7 weighing of evidence the expert reports</p> <p>8 of Longo and Rigler?</p> <p>9 A. I read the Longo supplement</p> <p>10 2018 after I wrote the report.</p> <p>11 Q. For purposes -- for purposes</p> <p>12 of the opinions again in this case, do</p> <p>13 you rely in any way on the Longo and</p> <p>14 Rigler reports?</p> <p>15 MS. O'DELL: Objection to</p> <p>16 form.</p> <p>17 THE WITNESS: I'm not sure I</p> <p>18 understand your question. As I</p> <p>19 said, I wrote the report on</p> <p>20 November 16th. I read the Longo</p> <p>21 supplement report in -- about two</p> <p>22 weeks ago.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. But you cite in your report</p>



<p style="text-align: right;">Page 250</p> <p>1 the -- the MDL report of Longo and 2 Rigler, correct? 3 A. What page is that please? 4 Q. At the end of Exhibit B. 5 A. I -- okay. 6 Excuse me. I referred to 7 Longo on page -- there is no page. 8 Sorry. 9 The cosmetic talc in the 10 Lancet and cosmetic talc in -- and 11 ovarian cancer in the Lancet. Those are 12 very early papers which I -- which I 13 reviewed. Those papers were considered. 14 The latest papers from Longo were not 15 considered in my report. 16 Q. Are you talking about the 17 latest -- 18 A. 2017, 2018. They were not 19 read until after the report was 20 finalized. 21 Q. Do you know Longo and 22 Rigler? 23 A. Not at all. 24 THE VIDEOGRAPHER: Doctor,</p>	<p style="text-align: right;">Page 252</p> <p>1 use, the polarized light 2 microscopy and the TEM all seem to 3 be the way he describes it. His 4 methodologies were spot on in 5 terms of what other people do. 6 BY MR. HEGARTY: 7 Q. Are you an expert in XRD? 8 A. As I stated, I worked with 9 people who used the instrumentation. An 10 expert, again, I'm not sure what you mean 11 by expert. Have I done XRD on my own, 12 no. But in our department we have 13 numerous people who -- who use that 14 instrumentation. 15 Q. Are you an expert in TEM? 16 A. I have done TEM for my Ph.D. 17 thesis. 18 Q. Have you do TEM -- have you 19 ever done TEM to detect asbestos? 20 A. I have not done TEM to 21 detect asbestos. But I looked at his 22 methodologies, his study design, and the 23 instruments that he used. And they are 24 state of the art.</p>
<p style="text-align: right;">Page 251</p> <p>1 can you raise your microphone up? 2 THE WITNESS: Oh, sure. 3 BY MR. HEGARTY: 4 Q. Did you do anything to 5 assess their expertise in this area? 6 A. I -- I -- 7 MS. O'DELL: Are you 8 referring to Dr. Longo and 9 Dr. Rigler? 10 MR. HEGARTY: Yes. 11 THE WITNESS: I read the -- 12 the bio sketch, a brief, very 13 brief bio sketch of Ray Longo. 14 And I looked up his credentials in 15 terms of how long he's been in 16 the -- in this company, how he 17 started this company or at least 18 was president of this company for 19 a short period of time. 20 From what I know of my own 21 work in the laboratory and working 22 with other chemists and technical 23 instrumentation people in the 24 laboratory, I -- the XRD that they</p>	<p style="text-align: right;">Page 253</p> <p>1 Q. Have you ever performed the 2 test that he describes in his articles or 3 reports? 4 A. I have used polarized light 5 microscopy. 6 Q. That's not my question. My 7 question is have you performed the same 8 tests in your lab or in any -- in your 9 experience that he has performed and 10 reported on in his reports? 11 A. Personally, no. 12 Q. Starting on Page 5, you talk 13 about asbestos. 14 A. Page 5 of what? 15 Q. Of your report. 16 A. Thank you. 17 Q. Is it your opinion that any 18 amount of exposure to asbestos, even to a 19 single fiber, can cause disease? 20 A. From the scientific 21 literature it is -- it appears -- it 22 appears pretty conclusive that there is 23 no threshold for the amount of 24 asbestiform asbestos that is needed to at</p>

<p style="text-align: right;">Page 254</p> <p>1 least start a disease process.  2 Q. Before being contacted by  3 counsel for plaintiffs in this case, had  4 you read any literature concerning  5 asbestos and ovarian cancer?  6 A. I have not read literature  7 prior to that on asbestos and ovarian  8 cancer. However, I am familiar with, as  9 I said, other particles, other dusts,  10 other fibers that I have worked with in  11 the laboratory.  12 Q. Had you even heard of a link  13 between asbestos and ovarian cancer  14 before being contacted by plaintiffs'  15 counsel?  16 A. Yes.  17 Q. Where did you hear that  18 from?  19 A. Discussed it with my  20 colleagues. As I said, I've listened to  21 the media on discussing it. And my  22 colleagues are a very good source,  23 although they do not do this work in  24 their laboratory, we all try to keep up</p>	<p style="text-align: right;">Page 256</p> <p>1 THE WITNESS: I don't think  2 that's -- I don't think that's --  3 I don't personally think that's  4 the question.  5 The question is, asbestos is  6 well classified, well known as a  7 Class 1 carcinogen by IARC. And  8 one fiber has the potential to  9 initiate the biological processes  10 or provides biological  11 plausibility that there, in fact,  12 by producing inflammation and  13 producing reactive oxygen  14 intermediates, one fiber can start  15 the process for ovarian cancer.  16 And again, let me just  17 repeat that my mission, my  18 question that was asked, was to  19 provide biological plausibility  20 for talc, not to define causation  21 as an epidemiologist.  22 BY MR. HEGARTY:  23 Q. So it's your opinion that a  24 single fiber of asbestos in talc can</p>
<p style="text-align: right;">Page 255</p> <p>1 with the latest emerging scientific  2 debates.  3 Q. What is the minimum number  4 of asbestos fibers necessary to cause  5 ovarian cancer?  6 A. Can -- do you mean -- I said  7 that there is really no threshold. And  8 it can be one fiber. It depends on the  9 individual and the susceptibilities and  10 the vulnerabilities of that particular  11 individual.  12 Q. So it's your opinion that  13 one fiber of asbestos can cause ovarian  14 cancer?  15 A. Under certain conditions,  16 yes, it is my opinion.  17 Q. Can you cite for me any  18 authority for that opinion specific to  19 one fiber?  20 MS. O'DELL: Object to form.  21 BY MR. HEGARTY:  22 Q. And ovarian cancer.  23 MS. O'DELL: Object to the  24 form.</p>	<p style="text-align: right;">Page 257</p> <p>1 establish biological plausibility between  2 talc and ovarian cancer?  3 A. My --  4 MS. O'DELL: Object to the  5 form.  6 THE WITNESS: My opinion is  7 that a single fiber can induce  8 inflammation and reactive oxygen  9 species and can change the cell  10 into a pro-oxidant cell that  11 starts the process for ovarian  12 cancer.  13 BY MR. HEGARTY:  14 Q. Do you agree that there are  15 background rates of asbestos in certain  16 areas?  17 A. Do you mean in the air?  18 Q. In the air?  19 A. In the air, it depends on  20 that area. If that's an area where  21 there's mining or there's a house being  22 redone from the 1970s or 19 -- early '80s  23 that might have used asbestos, then there  24 will be asbestos in the air. But not</p>

<p style="text-align: right;">Page 258</p> <p>1 sitting in this room, unless there is 2 asbestos in the walls, which I doubt 3 because it was only built about ten years 4 ago. 5 Q. Do the background rates of 6 asbestos in certain areas cause ovarian 7 cancer? 8 A. Asbestos has been shown to 9 cause ovarian cancer by inhalation, yes. 10 Q. Is it your opinion that 11 background rates of asbestos in the air 12 can cause ovarian cancer? 13 MS. O'DELL: Object to the 14 form. 15 THE WITNESS: I don't -- 16 again, background rates, it has 17 been shown that workers that are 18 in places where asbestos is made 19 have a higher incidence of lung 20 cancer as shown by Dr. Selikoff 21 many, many years ago. 22 BY MR. HEGARTY: 23 Q. Doctor, you know what a 24 background rate of -- background level of</p>	<p style="text-align: right;">Page 260</p> <p>1 A. It depends. After the World 2 Trade Center, there was. 3 Q. Are those background 4 levels -- do those background levels 5 cause ovarian cancer? 6 MS. O'DELL: Objection to 7 the form. 8 THE WITNESS: The studies 9 that have been done by my 10 colleagues in the aftermath of the 11 World Trade Center disaster where 12 asbestos was generated have not at 13 this time -- and New York City 14 Public Health has not at this time 15 looked at ovarian cancer. Ovarian 16 cancer occurs within 10 to 30, up 17 to 40 years later. So since 9/11 18 was only 2001, there is -- there 19 is not sufficient time to have 20 developed ovarian cancer. 21 BY MR. HEGARTY: 22 Q. Doctor, before 9/11 there 23 were background levels of asbestos in 24 certain parts of New York City, correct?</p>
<p style="text-align: right;">Page 259</p> <p>1 a particle in air is, right? 2 A. Yes, sir, I do. 3 Q. Okay. And is it your 4 opinion that background levels of 5 asbestos in the air can cause ovarian 6 cancer? 7 MS. O'DELL: Objection to 8 form. 9 THE WITNESS: As I said, 10 sitting in this room, there should 11 not be any background level of 12 asbestos. So if you're talking 13 about background level in a 14 particular institute or industry 15 where they're developing it, those 16 levels are quite high, and yes, I 17 do believe that those levels 18 within a working environment can 19 indeed cause inflammation that can 20 lead to causation. 21 BY MR. HEGARTY: 22 Q. There are background levels 23 of asbestos in the air in New York City, 24 correct?</p>	<p style="text-align: right;">Page 261</p> <p>1 A. When there are houses that 2 were built with it. There is -- asbestos 3 is not just -- should not be -- unless 4 there's a source, asbestos should not -- 5 it would not be coming from jet engines. 6 It would not be coming from other 7 sources. If it's there, it came from a 8 specific source. It's like we should not 9 have lead in our body at all. But we do 10 because the lead came from the air where 11 there was lead in the gasoline. 12 So there shouldn't be 13 background levels of asbestos just 14 hanging around unless there's an adequate 15 source that produced it. 16 Q. Does EPA allow background 17 levels of asbestos in water? 18 A. I'm not familiar with that 19 information. That's in water. You asked 20 me about air. 21 Q. I asked you a different 22 question. I can ask you a different 23 question, Doctor. 24 A. I understand the question,</p>

<p style="text-align: right;">Page 262</p> <p>1 yes.</p> <p>2 Q. Does EPA allow background</p> <p>3 levels of asbestos in water?</p> <p>4 A. I have not reviewed that</p> <p>5 literature.</p> <p>6 Q. As a toxicologist, you agree</p> <p>7 that dose or level of exposure determines</p> <p>8 the toxicity of substances, correct?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 THE WITNESS: I believe that</p> <p>12 dose as well as frequency,</p> <p>13 duration, time of exposure are</p> <p>14 all -- as well as dose contribute</p> <p>15 to the toxicity of an agent.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. You agree that a substance</p> <p>18 can produce a harmful effect only if it</p> <p>19 reaches a susceptible biological system</p> <p>20 within the body in high enough</p> <p>21 concentration, correct?</p> <p>22 MS. O'DELL: Objection to</p> <p>23 form.</p> <p>24 THE WITNESS: It depends on</p>	<p style="text-align: right;">Page 264</p> <p>1 not been done.</p> <p>2 There are -- there is</p> <p>3 information on no observable</p> <p>4 adverse effect level that has been</p> <p>5 established using a dose-response</p> <p>6 by the NTP, National Toxicology</p> <p>7 Program.</p> <p>8 And two milligrams of talc</p> <p>9 that they used produced minimal --</p> <p>10 minimal affects in the rats and</p> <p>11 mice that they tested. So</p> <p>12 somewhere below at least, from an</p> <p>13 inhalation perspective, is --</p> <p>14 produces no effect.</p> <p>15 However, they saw effects</p> <p>16 even at the lowest, two milligrams</p> <p>17 per.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. My question was specific to</p> <p>20 ovarian cancer. That study did not --</p> <p>21 did not identify any ovarian cancers in</p> <p>22 the mice -- in the mice or rats, correct?</p> <p>23 A. That's not what they looked</p> <p>24 for.</p>
<p style="text-align: right;">Page 263</p> <p>1 the -- let me read your question</p> <p>2 over. It was a lengthy question.</p> <p>3 It depends on the -- on the</p> <p>4 toxicant that you're talking</p> <p>5 about. There is dose that you're</p> <p>6 exposed to, or concentration that</p> <p>7 you're supposed to, and dose to</p> <p>8 the target tissue. And for every</p> <p>9 different -- every different</p> <p>10 chemical, there is a different</p> <p>11 target dose that could start a</p> <p>12 biological process.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. And what is the target dose</p> <p>15 that is necessary to start the biologic</p> <p>16 process of talc and ovarian cancer?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 THE WITNESS: Well, if</p> <p>20 you -- if you look at talc as a</p> <p>21 whole, to give you a</p> <p>22 concentration, a threshold</p> <p>23 concentration, I'm not sure that</p> <p>24 has been -- I don't -- that has</p>	<p style="text-align: right;">Page 265</p> <p>1 Q. My question is specific to</p> <p>2 ovarian cancer.</p> <p>3 A. Let me read your question</p> <p>4 over again. Could you repeat your</p> <p>5 question. It's already gone past.</p> <p>6 Q. What is the target dose that</p> <p>7 is necessary to start the biologic</p> <p>8 process of talc and ovarian cancer?</p> <p>9 A. Well, as I talked about, one</p> <p>10 fiber of asbestos could start the</p> <p>11 biological process. It is not clear if</p> <p>12 there is a threshold dose or a</p> <p>13 concentration, or whether one -- and</p> <p>14 we're talking about the whole talcum</p> <p>15 powder product. We're not talking about</p> <p>16 any one product. You're talking about</p> <p>17 the whole process and how much it will</p> <p>18 start the biological process.</p> <p>19 It's unknown, it's not in</p> <p>20 the literature. But I will tell you that</p> <p>21 even small doses that are used of the</p> <p>22 talcum -- of a talcum product, if you</p> <p>23 take a woman who takes a handful, if you</p> <p>24 take a woman that takes a little bit on a</p>

<p style="text-align: right;">Page 266</p> <p>1 powder puff, that amount could even, 2 depending upon the woman, the 3 susceptibility, the vulnerability, can 4 all start the process. 5 We're talking about the 6 process, in my opinion. What you're 7 talking about and in the opinion that I 8 report here, is that that can start an 9 inflammatory process. 10 Q. And what is the number of 11 particles of talc necessary to start the 12 biologic process? 13 MS. O'DELL: Object to form. 14 THE WITNESS: That is not in 15 the scientific literature. 16 BY MR. HEGARTY: 17 Q. Over Pages 6 through 8 of 18 your report you discuss asbestos. Is the 19 presence of asbestos in talc necessary 20 for your biologic plausibility opinions? 21 A. I looked at the entire 22 product. 23 Q. Well, do you intend to 24 testify that there is biologic</p>	<p style="text-align: right;">Page 268</p> <p>1 THE WITNESS: Can -- can you 2 address the question again? 3 BY MR. HEGARTY: 4 Q. Is it your opinion that pure 5 talc does not exist? 6 When I say pure talc, I mean 7 talc without asbestos, without heavy 8 metals, without fragrance. 9 MS. O'DELL: Objection to 10 form. 11 THE WITNESS: The idea of 12 talc is that it has, within its 13 lattice, metals. 14 So platy talc refers to the 15 structure or the morphology of the 16 talc, how it looks, what 17 dimensions it's in. 18 So, do I think there is 19 platy talc? Of course there is 20 platy talc. 21 BY MR. HEGARTY: 22 Q. Is there platy talc without 23 asbestos? 24 A. Well, according to the</p>
<p style="text-align: right;">Page 267</p> <p>1 plausibility between pure talc, the platy 2 talc, and ovarian cancer? 3 MS. O'DELL: Object to the 4 form. 5 THE WITNESS: I don't 6 think -- my opinion is that there 7 may not be anything such as platy 8 talc in a pure form. 9 BY MR. HEGARTY: 10 Q. Okay. It's your opinion 11 that pure talc does not exist? 12 MS. O'DELL: I'm not sure 13 she -- she finished her answer. 14 Had you finished, Doctor, 15 before? 16 THE WITNESS: I actually 17 need a little water. 18 MS. O'DELL: Okay. Sure. 19 Had you finished your answer 20 before the second question was 21 asked? 22 THE WITNESS: No. 23 MS. O'DELL: Okay. You may 24 finish.</p>	<p style="text-align: right;">Page 269</p> <p>1 studies out of Mossman's laboratories, 2 they used asbestos, they used talc that 3 contained nonfibrous talc. 4 Q. Do you have an opinion on 5 whether there is talc without asbestos? 6 MS. O'DELL: Object to the 7 form. 8 THE WITNESS: In many of the 9 documents from Johnson &amp; Johnson, 10 they measured fibrous talc as well 11 as other forms, non-asbestiform, 12 and they -- they found that there 13 were samples, individual samples 14 that they reported as 15 nondetectable as having 16 asbestiform talc. 17 BY MR. HEGARTY: 18 Q. Well, do you have an opinion 19 of whether there is talc without 20 asbestos? 21 A. It depends where -- where 22 it's mined. If it's mined in an area 23 where people were extremely cautious, 24 there could be.</p>



<p style="text-align: right;">Page 270</p> <p>1 Q. Did you do analysis of 2 biologic plausibility for talc without 3 asbestos? 4 MS. O'DELL: Objection to 5 form. 6 THE WITNESS: My biological 7 assessment, my -- my biological 8 plausibility was looking at the 9 entire product of talcum powder. 10 BY MR. HEGARTY: 11 Q. And how do you define the 12 entire product? 13 A. The entire product is 14 whatever are the ingredients or listed 15 within the documents or the test results 16 from Imerys that -- that indicate what 17 they measured, including the metals, the 18 asbestos, the -- the asbestiform fibers, 19 the fragrances. 20 Q. So you did your biologic 21 plausibility analysis with -- based on 22 talc that has asbestos, heavy metals and 23 fragrance in it, correct? 24 MS. O'DELL: Objection to</p>	<p style="text-align: right;">Page 272</p> <p>1 sure how that would be done or I 2 don't think it could be done. 3 What I did was I did it for 4 the entire product. 5 BY MR. HEGARTY: 6 Q. And what do you -- what do 7 you think -- what is your opinion -- 8 strike that. 9 What is in the entire 10 product in your opinion? 11 A. Based upon the Johnson &amp; 12 Johnson documents. That's where my -- 13 that's where I will tell you what is in 14 there. 15 As -- as far as the product 16 documents, it indicates that there are 17 metals, including -- not -- not totally 18 inclusive of, but to mention a few of the 19 more well-known ones, cobalt, chromium 20 and nickel. 21 There are also, according to 22 the Crowley report, there are also many 23 chemicals that make up a fragrance. And 24 there -- and in many of the samples</p>
<p style="text-align: right;">Page 271</p> <p>1 form. 2 THE WITNESS: I did my 3 biological plausibility on talcum 4 powder products. 5 I looked at individual 6 products, individual constituents 7 in adding to my -- to my report, 8 to my document. But I looked at 9 the entire product. And it is my 10 opinion that the entire product 11 causes inflammation and that 12 inflammation then goes on as a 13 triggering mechanism to turn on 14 certain genes and to bind iron 15 that can lead to the changes 16 needed for cancer in the ovary. 17 BY MR. HEGARTY: 18 Q. You did not do a separate 19 analysis of talc without asbestos or 20 without -- and without heavy metals and 21 without fragrance, correct? 22 MS. O'DELL: Object to the 23 form. 24 THE WITNESS: I'm not even</p>	<p style="text-align: right;">Page 273</p> <p>1 tested, there was asbestos or asbestiform 2 fibers, some of which were called fibrous 3 talc, others were called asbestiform and 4 others in which they were called asbestos 5 fibers, or amphiboles or anthophyllite. 6 Q. Did you review all the 7 test -- 8 A. Anthophyllite. 9 Q. I'm sorry. 10 Did you review all the 11 testing documents produced by Johnson &amp; 12 Johnson and Imerys in this case? 13 A. I reviewed the documents 14 that are in the production document black 15 binder to my right. 16 Q. Those were provided to you 17 by plaintiffs' counsel, correct? 18 A. That is correct. 19 Q. Did you ask them if they 20 provided to you all testing documents 21 that had been produced in this case with 22 regard -- by Johnson &amp; Johnson and 23 Imerys? 24 A. I did not ask that question</p>



<p style="text-align: right;">Page 274</p> <p>1 specifically.</p> <p>2 Q. Do you know whether there</p> <p>3 are additional documents of tests --</p> <p>4 documents describing tests that were done</p> <p>5 by Johnson &amp; Johnson and/or Imerys with</p> <p>6 regard to asbestos, heavy metals,</p> <p>7 fragrances and talc?</p> <p>8 MS. O'DELL: Object to form.</p> <p>9 THE WITNESS: Plaintiff</p> <p>10 counsels and myself did talk about</p> <p>11 that, some of that information,</p> <p>12 and --</p> <p>13 MS. O'DELL: Doctor,</p> <p>14 don't -- in terms of our</p> <p>15 conversations --</p> <p>16 THE WITNESS: I'm sorry.</p> <p>17 MS. O'DELL: -- those</p> <p>18 conversations are our work</p> <p>19 product.</p> <p>20 But to the degree that your</p> <p>21 answer doesn't depend on our</p> <p>22 conversations, you may -- you may</p> <p>23 answer.</p> <p>24 THE WITNESS: I -- I made it</p>	<p style="text-align: right;">Page 276</p> <p>1 not present.</p> <p>2 Q. You relied on plaintiffs'</p> <p>3 counsel to select for you the testing</p> <p>4 documents that you reviewed, correct?</p> <p>5 A. I -- I read and reviewed</p> <p>6 whatever they sent me.</p> <p>7 Q. And did you do anything to</p> <p>8 verify that you had all the documents</p> <p>9 regarding the testing of Johnson's Baby</p> <p>10 Powder?</p> <p>11 A. I did nothing personally</p> <p>12 other than ask the -- the attorneys if</p> <p>13 there was anything else I needed in</p> <p>14 forming my opinion. In -- of production</p> <p>15 documents, if we're just referring to</p> <p>16 that.</p> <p>17 I have no access to</p> <p>18 production documents on my own or through</p> <p>19 the internet. And I know none of the</p> <p>20 other deposees.</p> <p>21 Q. Did you do a comparison of</p> <p>22 biologic plausibility across various</p> <p>23 brands of talcum powder products?</p> <p>24 A. I did not personally do any</p>
<p style="text-align: right;">Page 275</p> <p>1 clear that I would like to see</p> <p>2 documents that could go into my</p> <p>3 assessment of biological</p> <p>4 plausibility.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Would you like to see</p> <p>7 documents showing that there is no</p> <p>8 asbestos in talcum powder, in particular</p> <p>9 Johnson's Baby Powder?</p> <p>10 A. I will review any documents</p> <p>11 that are provided to me, if asked to</p> <p>12 review them.</p> <p>13 Q. Did you ask plaintiffs'</p> <p>14 counsel to provide you documents of</p> <p>15 testing showing no asbestos in Johnson's</p> <p>16 Baby Powder?</p> <p>17 A. Many of those -- of the</p> <p>18 documents that are in the product</p> <p>19 production document show that there are</p> <p>20 samples that do not contain asbestos, or</p> <p>21 I will say asbestiform or talc fibers.</p> <p>22 So there is information in there showing</p> <p>23 when there is -- it is present and</p> <p>24 information in there showing when it was</p>	<p style="text-align: right;">Page 277</p> <p>1 of that. However many of the documents</p> <p>2 and many of the studies including the</p> <p>3 Longo supplement did compare, for</p> <p>4 example, I think I misspoke when I said</p> <p>5 one of the places that Johnson &amp; Johnson</p> <p>6 gets their talc is Korea. What I meant</p> <p>7 was China. I should have said Asia. So</p> <p>8 Korea is also a mine that provided, but</p> <p>9 not to Johnson &amp; Johnson.</p> <p>10 MS. O'DELL: Hey, Mark,</p> <p>11 we've been going about an hour and</p> <p>12 15 minutes.</p> <p>13 MR. HEGARTY: Okay.</p> <p>14 MS. O'DELL: Can we take a</p> <p>15 break?</p> <p>16 MR. HEGARTY: Yeah.</p> <p>17 THE VIDEOGRAPHER: The time</p> <p>18 is 2:27 p.m. Off the record.</p> <p>19 (Short break.)</p> <p>20 THE VIDEOGRAPHER: We are</p> <p>21 back on the record. The time is</p> <p>22 2:45 p.m.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Doctor, if evidence was that</p>

<p style="text-align: right;">Page 278</p> <p>1 there is no asbestos in Johnson's Baby 2 Powder, would that change your opinions 3 as to biological plausibility? 4 A. No, sir, it would not. 5 Q. Same question with regard to 6 heavy metals. If there were no heavy 7 metals in Johnson's Baby Powder, would 8 that change your opinions on biological 9 plausibility? 10 A. I looked at the entire 11 product and it would not -- it would not 12 change my opinion, as it exists 13 currently, with biological plausibility 14 that it would cause ovarian cancer 15 through -- through inflammation, is my 16 opinion. 17 Q. In looking at your heavy 18 metals section, beginning at Page 8 of 19 your report -- are you there? 20 A. I'm not. I had to put my 21 glasses on. Thank you. 22 Q. There are no studies that 23 have looked at the effects of these 24 metals in powder dusted on the perineum,</p>	<p style="text-align: right;">Page 280</p> <p>1 ludicrous actually. 2 Q. None of the studies that you 3 cite in your heavy metals section link 4 the exposures that you discussed to 5 ovarian cancer risk, correct? 6 THE WITNESS: I'm sorry. 7 This is not coming up. 8 (Whereupon, a discussion was 9 held off the stenographic record.) 10 THE WITNESS: They -- the 11 studies that I list for the 12 individual metals talk about the 13 potential inflammatory and 14 carcinogenic potential of those 15 particular metals. And based on 16 the Crowley report, there are, and 17 other production documents from 18 Johnson &amp; Johnson, they list three 19 particular metals that are 20 associated with Johnson &amp; Johnson 21 products, cobalt, nickel and 22 chromium. 23 BY MR. HEGARTY: 24 Q. That was not my question.</p>
<p style="text-align: right;">Page 279</p> <p>1 correct? 2 A. Your question is there are 3 no studies looking at these individual 4 metals? 5 Q. Correct? 6 A. Perineal studies in the 7 ovarian -- 8 Q. No, my question is, there 9 are no studies that looked at the effects 10 of these metals in powder dusted on the 11 perineum, correct? 12 A. I'm not sure I understand 13 your question. 14 Q. You don't cite any studies 15 that have looked at the effect of 16 applying these metals to the perineum, 17 correct? 18 A. To my knowledge, there are 19 no specific animal studies that show 20 nickel was applied to the perineal. 21 Q. There are no human studies 22 either, correct? 23 A. To my knowledge, there are 24 no human studies. That would be</p>	<p style="text-align: right;">Page 281</p> <p>1 My question is, none of the studies that 2 you cite -- 3 A. On the -- 4 Q. -- in your section on heavy 5 metals, evaluate ovarian carcinogenicity 6 potentials of these metals, correct? 7 MS. O'DELL: Object to the 8 form. 9 THE WITNESS: I do not talk 10 about ovarian cancer in particular 11 relation to these three metals 12 that I cited -- 13 BY MR. HEGARTY: 14 Q. No studies -- 15 A. -- in the report. 16 Q. -- that you cite refer to 17 risk of ovarian cancer with exposure to 18 these metals, correct? 19 A. With my charge being 20 biological plausibility, I thought that 21 it was my opinion -- my professional 22 opinion is that it was more important to 23 discuss the potential for inflammatory 24 responsiveness and carcinogenic</p>

<p style="text-align: right;">Page 282</p> <p>1 potential.</p> <p>2 Q. Doctor, you don't cite any</p> <p>3 studies that look at -- look at the</p> <p>4 ovarian carcinogenicity potential of any</p> <p>5 of these metals, correct?</p> <p>6 MS. O'DELL: Object to form.</p> <p>7 THE WITNESS: Not in my</p> <p>8 report.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. What are the exposure levels</p> <p>11 of these metals necessary to have</p> <p>12 biologic plausibility of ovarian cancer?</p> <p>13 A. As far as biological</p> <p>14 plausibility of these metals, these</p> <p>15 metals are -- unless there are particular</p> <p>16 standards for a particular metal, nothing</p> <p>17 is really established for what it would</p> <p>18 take for nickel to cause ovarian cancer.</p> <p>19 However, the ability of</p> <p>20 these metals to produce inflammation are</p> <p>21 very, very low levels. And if they</p> <p>22 produce inflammation, then they have the</p> <p>23 potential to go on to produce cancer.</p> <p>24 And many of these metals do.</p>	<p style="text-align: right;">Page 284</p> <p>1 them.</p> <p>2 Q. Did you find any?</p> <p>3 A. Again, the purpose of</p> <p>4 writing this section on heavy metals had</p> <p>5 to do with bringing out the inflammatory</p> <p>6 and the biological plausibility that in</p> <p>7 my mind is linked to talc and ovarian</p> <p>8 cancer.</p> <p>9 Q. Doctor, listen to my</p> <p>10 question. Did you find any studies</p> <p>11 reporting on a risk of ovarian cancer</p> <p>12 with exposure to any of those metals?</p> <p>13 MS. O'DELL: Objection to</p> <p>14 form.</p> <p>15 THE WITNESS: I found in</p> <p>16 cobalt, but it does not have to do</p> <p>17 with ovarian cancer, but I did</p> <p>18 find that the absorption of cobalt</p> <p>19 is much higher in women than in</p> <p>20 men. And that many of these</p> <p>21 studies show that you have</p> <p>22 increased proliferation. And as I</p> <p>23 said, mine was -- my question that</p> <p>24 I needed to address was biological</p>
<p style="text-align: right;">Page 283</p> <p>1 Q. Well, none of these studies</p> <p>2 report a threshold level of exposure to</p> <p>3 cobalt, chromium, or nickel to increase</p> <p>4 the risk of ovarian cancer, correct?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 THE WITNESS: That was not</p> <p>8 the purpose of my writing.</p> <p>9 My -- my writing was to</p> <p>10 exemplify the carcinogenic</p> <p>11 potential and the inflammatory and</p> <p>12 some of the human health effects</p> <p>13 that are commonly seen. Ovarian</p> <p>14 cancer is not that common. And so</p> <p>15 it's not unusual that other --</p> <p>16 that ovarian cancer was not looked</p> <p>17 into in some of these studies.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Well, you found no studies</p> <p>20 looking at exposure to any of those</p> <p>21 metals and risk of ovarian cancer,</p> <p>22 correct?</p> <p>23 A. It's not that I didn't find</p> <p>24 any. I wasn't particularly looking for</p>	<p style="text-align: right;">Page 285</p> <p>1 plausibility.</p> <p>2 So I did find many of these</p> <p>3 factors, many of these metals, all</p> <p>4 of these metals have the potential</p> <p>5 to produce the changes that are in</p> <p>6 the carcinogenic process.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. I'm going to ask the</p> <p>9 question one more time. And if we don't</p> <p>10 get an answer I'm going to call Judge</p> <p>11 Pisano.</p> <p>12 Cite for me, which study did</p> <p>13 you find that linked exposure to these</p> <p>14 metals to ovarian cancer?</p> <p>15 MS. O'DELL: Objection to</p> <p>16 the form.</p> <p>17 Dr. Zelikoff has answered</p> <p>18 your question multiple times.</p> <p>19 But you may answer it again.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. Let me ask it differently.</p> <p>22 Did you find any studies reporting on a</p> <p>23 risk of ovarian cancer with exposure to</p> <p>24 any of these metals, that being cobalt,</p>

<p style="text-align: right;">Page 286</p> <p>1 chromium, or nickel?</p> <p>2 A. I was not looking</p> <p>3 specifically for that. So, no, I did not</p> <p>4 find that.</p> <p>5 Q. Which of the studies that</p> <p>6 you report show that the exposure levels</p> <p>7 evaluated in those studies are in any way</p> <p>8 related to human exposure levels through</p> <p>9 Johnson's Baby Powder?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 THE WITNESS: Are you</p> <p>13 talking about inhalation or</p> <p>14 perineal application?</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Either method of exposure.</p> <p>17 A. So many of the inhalation</p> <p>18 numbers are concentrations, and looking</p> <p>19 at the Johnson &amp; Johnson documents in</p> <p>20 terms of what is in the head and in the</p> <p>21 face area after diapering as well as</p> <p>22 during powdering, indicates that the</p> <p>23 concentrations that are possibly inhaled</p> <p>24 contain particles that can initiate a</p>	<p style="text-align: right;">Page 288</p> <p>1 of these metals in terms of parts</p> <p>2 per million, whatever talc reached</p> <p>3 there, there's -- there is a</p> <p>4 strong potential that that amount</p> <p>5 of the concentration of the metal</p> <p>6 would also reach the target organ.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. That's not my question,</p> <p>9 Doctor.</p> <p>10 How much nickel, cobalt and</p> <p>11 chromium reached the ovary with a single</p> <p>12 application of Johnson's Baby Powder to</p> <p>13 the perineum?</p> <p>14 A. I don't have -- that</p> <p>15 information is not available.</p> <p>16 They did show in studies, in</p> <p>17 a few studies, I think it was the</p> <p>18 Hamilton study that -- or Henderson</p> <p>19 study -- that there -- talc indeed does</p> <p>20 reach the ovary from perineal application</p> <p>21 or from intravaginal application. And</p> <p>22 whatever is -- whatever the concentration</p> <p>23 is that reached the ovary, carried with</p> <p>24 it these -- one -- one or more or all of</p>
<p style="text-align: right;">Page 287</p> <p>1 response.</p> <p>2 Also, from looking at the</p> <p>3 Johnson &amp; Johnson documents, many of</p> <p>4 those results indicate -- and I think we</p> <p>5 have an exhibit here of the table of the</p> <p>6 concentrations that were found.</p> <p>7 Well, it's not at my local</p> <p>8 fingertips here. But --</p> <p>9 MS. O'DELL: Are you looking</p> <p>10 for Exhibit C, Doctor, I think</p> <p>11 it's right there with -- on</p> <p>12 your -- on your paper clip.</p> <p>13 MR. HEGARTY: Let me</p> <p>14 withdraw the question.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Doctor, how much nickel,</p> <p>17 cobalt and chromium reach the ovary with</p> <p>18 one application of Johnson's Baby Powder</p> <p>19 to the perineum?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 THE WITNESS: Since much of</p> <p>23 the -- since Johnson's Baby Powder</p> <p>24 has a high concentrations of some</p>	<p style="text-align: right;">Page 289</p> <p>1 these three metals.</p> <p>2 Q. You agree --</p> <p>3 A. So it was a similar</p> <p>4 concentration.</p> <p>5 Q. You agree that all of the</p> <p>6 metals you talk about are in -- are all</p> <p>7 around us, they are in food, correct?</p> <p>8 A. The metals nickel, chromium,</p> <p>9 cobalt can be in food, yes.</p> <p>10 Q. They are in the air,</p> <p>11 correct?</p> <p>12 A. They are in certain ambient</p> <p>13 environments.</p> <p>14 Q. These are metals that are</p> <p>15 considered ubiquitous, correct?</p> <p>16 MS. O'DELL: Objection to</p> <p>17 the form.</p> <p>18 THE WITNESS: They are --</p> <p>19 chromium not as much -- I'm sorry,</p> <p>20 cobalt not as much. But chromium</p> <p>21 and nickel, they are in the air,</p> <p>22 and depending upon the environment</p> <p>23 that is producing it, if you go to</p> <p>24 Sundre, Canada, you can have lots</p>

<p style="text-align: right;">Page 290</p> <p>1 of nickel in the air. But if you 2 go to New York City, concentrate 3 as we've measured in my laboratory 4 prior to this deposition, or prior 5 to this case, my involvement in 6 this case, you will see very small 7 concentrations of nickel. There 8 should not be a lot in the air. 9 And we also measured 10 chromium, and it should not be -- 11 unless you have a polluted 12 environment there should not be a 13 lot of these metals in the air. 14 BY MR. HEGARTY: 15 Q. Is the metal are not -- the 16 metals that are in the air, nickel and 17 chromium, sufficient to have biologic 18 plausibility between those metals and 19 ovarian cancer? 20 A. Those -- those metals, yes, 21 the metals in the air can cause an 22 inflammatory response. The 23 concentrations of the metals in the air 24 can cause an inflammatory response and</p>	<p style="text-align: right;">Page 292</p> <p>1 Q. Did you do an analysis 2 yourself of Johnson's Baby Powder for the 3 presence of these heavy metals? 4 A. I did not do any 5 instrumentation studies measuring the 6 amount. I -- I relied on the documents. 7 Q. But you are capable of doing 8 that analysis, correct? 9 A. We are capable, in my 10 laboratory, along with colleagues, of 11 measuring by XRF, x-ray fluorescence, and 12 by ICP mass spec, measuring the amounts 13 of metals in tissues, correct. 14 Q. But you did not do that 15 testing here, correct? 16 A. My job was to define 17 biological plausibility based upon 18 literature, relevant literature and 19 documents, internal documents. 20 Q. Nowhere in your report do 21 you identify the exposure levels of any 22 of these metals that are necessary to 23 cause ovarian cancer, correct? 24 MS. O'DELL: Objection to</p>
<p style="text-align: right;">Page 291</p> <p>1 can start processes and change gene 2 expression within cells. 3 Q. Cite for me any study that 4 shows that inflammatory response has ever 5 occurred in the ovary. 6 MS. O'DELL: Objection to 7 form. 8 THE WITNESS: There are 9 granulomas that have been found in 10 animal studies of -- in the lung. 11 You are talking about in the 12 ovary, I understand that. 13 BY MR. HEGARTY: 14 Q. I'm talking about the 15 studies that have not looked at talc, but 16 have looked at cobalt, chromium -- 17 A. Okay. 18 Q. -- nickel and cobalt without 19 regard to talc, cite for me any studies 20 that have shown that those metals have 21 caused inflammation in the ovary? 22 A. By themselves, there are no 23 studies that demonstrate that, that I'm 24 aware of.</p>	<p style="text-align: right;">Page 293</p> <p>1 form. Asked and answered. 2 THE WITNESS: There is no 3 literature that says you need one 4 particle or ten particles. 5 The inflammatory response 6 that nickel causes is extremely 7 well established, even at very low 8 concentrations. And -- and the 9 same is true for hexavalent 10 chromium and for chromium, 11 trivalent chromium. 12 BY MR. HEGARTY: 13 Q. Are there any studies that 14 report on exposure of these metals to the 15 ovaries? 16 A. Are you talking about alone? 17 Q. Individually or together, 18 but the metals themselves. 19 A. Just the metals -- 20 MS. O'DELL: Object -- 21 objection to form. 22 THE WITNESS: These metals 23 by themselves have been tested 24 extensively in cells and in -- in</p>



<p style="text-align: right;">Page 294</p> <p>1 animals to produce inflammation, 2 to change the epigenome of the 3 cells, to change gene expression. 4 And there was no -- there was no 5 reason to believe whether or not 6 there are specific studies 7 associated with the ovary. There 8 are no reason to believe that it 9 would not do the same effects in 10 cells as well as in the ovary, in 11 the lung, and the kidney and the 12 liver. 13 BY MR. HEGARTY: 14 Q. Doctor, you are not aware of 15 any studies that have looked at the 16 effects of these metals on human ovarian 17 cells, correct? 18 MS. O'DELL: Object to the 19 form. 20 THE WITNESS: Again, I'm not 21 an epidemiologist, so -- and I'm 22 not a clinical toxicologist. So I 23 will have to stand by the -- the 24 data that I do know in -- in</p>	<p style="text-align: right;">Page 296</p> <p>1 form. 2 THE WITNESS: The exposures 3 are similar, or can be similar. 4 But as I stated before, for 5 these metals as well as for 6 asbestiform fibers, all it takes 7 is a small amount, if not just one 8 fiber, to cause the response and 9 to start the process of 10 inflammation, gene expression, 11 upregulation of genes that are 12 associated with biological 13 mediators, proinflammatory 14 cytokines. 15 BY MR. HEGARTY: 16 Q. Yet you cite no study that 17 reports that response in human ovarian 18 cells, correct? 19 MS. O'DELL: Object to the 20 form. 21 THE WITNESS: I -- if you're 22 still talking about individual 23 metals, no. 24 But if you're talking about</p>
<p style="text-align: right;">Page 295</p> <p>1 extensive -- have extensive 2 knowledge of. And that's human ex 3 vivo and in vitro studies. And I 4 am not aware. 5 That is not to say that they 6 are not out there. And I 7 especially do not know about the 8 humans, because I focus as a 9 toxicologist. I'm an animal 10 toxicologist. 11 BY MR. HEGARTY: 12 Q. Did you do any comparison 13 between the doses of -- of the metals 14 reported in the studies that you cited to 15 those in women using talc? 16 A. I did no calculations on -- 17 on my own. 18 Q. Did you do any calculations 19 that tested these metals in animals to 20 determine what the -- that -- that they 21 relate in any way to the dose that a 22 human would experience through Johnson's 23 Baby Powder use? 24 MS. O'DELL: Objection to</p>	<p style="text-align: right;">Page 297</p> <p>1 in vitro studies like those of 2 Saed who looked for oxidative 3 stress and -- and prooxidant 4 changes, and if you are talking 5 about Shukla study who also looked 6 at ovarian cells, human ovarian 7 cells, and looked at changes in 8 gene expression associated with 9 oxidant production and reactive 10 oxygen species production, then 11 yes, in cell culture using human 12 ovarian epithelial cells, because 13 that's what we are talking about 14 here. 15 BY MR. HEGARTY: 16 Q. None of those studies 17 applied nickel to human ovarian cells, 18 did they? 19 A. No, they did not. 20 Q. None of those studies 21 applied cobalt to human ovarian cells, 22 correct? 23 A. No, they did not. 24 Q. None of those studies</p>



<p style="text-align: right;">Page 298</p> <p>1 applied chromium to ovarian -- human 2 ovarian cells, correct? 3 A. Correct. But what we're 4 talk -- what I'm talking about and the 5 basis of my opinion is the product in its 6 entirety, not breaking it down to 7 individual constituents. 8 Q. Is it necessary for purposes 9 of your biologic plausibility opinion 10 that talc reach the ovary? 11 A. Not necessarily. 12 Talc does -- talc and any 13 other particle does not have to reach the 14 site of deposition. They can, and -- and 15 do, I believe that they not only migrate 16 to an area and they can get to an area 17 and then cause inflammation which then 18 can be -- the cytokines where there's 19 tumor necrosis factor, interleukin-1, or 20 any of the other proinflammatory 21 cytokines can then get to the air, the 22 site of this -- this target organ. 23 So you do not have to have, 24 in particle toxicology and in talc</p>	<p style="text-align: right;">Page 300</p> <p>1 target site, let's say in the case 2 of inhalation or in the case of 3 direct application to the perineal 4 area, you will have the process of 5 impacting with those cells and 6 generating cell mediated reactions 7 and immunological reactions and 8 inflammatory responses. 9 And those inflammatory 10 responses and those reactive 11 oxygen species, except for 12 hydrogen peroxide which can't 13 travel a far distance, can get 14 into -- can and do get into the 15 blood circulation and then can 16 reach distant organs. 17 BY MR. HEGARTY: 18 Q. Cite for me any published 19 authority that says that inflammation in 20 the lungs will cause inflammation in the 21 ovaries. 22 MS. O'DELL: Object to the 23 form. Misstates her testimony. 24 THE WITNESS: To that</p>
<p style="text-align: right;">Page 299</p> <p>1 toxicology, you do not have to have the 2 presence. Although, in early studies 3 they have found talc particles not only 4 in the ovary, but also in the lymph 5 node -- in the lymphatics that drain the 6 ovary. 7 Q. Cite for me any study that 8 has reported inflammation in the ovaries 9 from inflammation of -- due to a particle 10 in the lung -- strike that. 11 Is it your contention that 12 inflammation in the lung due to a 13 particle will cause inflammation in the 14 ovaries? 15 MS. O'DELL: Objection to 16 form. 17 THE WITNESS: I'm telling 18 you that -- 19 MS. O'DELL: Go ahead. 20 THE WITNESS: -- there's 21 biological plausibility to suggest 22 that. 23 When you have a particle 24 coming in and going to a local</p>	<p style="text-align: right;">Page 301</p> <p>1 specific question, no. But I 2 can -- I can cite you many studies 3 that show in terms of other 4 particles for the lungs that has 5 been shown to cause inflammation 6 in other areas. 7 For example, in the case of 8 Ghio and other investigators, you 9 will find inflammation not only in 10 the blood by the measurement of 11 cytokines in the blood, even 12 though the first target organ was 13 the -- was the lungs. 14 Also, if you look at 15 obesity, obesity is a pro-oxidant 16 state, and that can generate -- 17 the reason obesity causes other 18 health effects is because it's a 19 big mass of inflammation. And the 20 inflammation in that particular 21 site of all those fatty cells, 22 they can release inflammatory 23 mediators that go all over. And 24 that literature is out there.</p>

<p style="text-align: right;">Page 302</p> <p>1 BY MR. HEGARTY: 2 Q. So is it your opinion for 3 purposes of your biological 4 plausibility -- strike that. 5 Is it -- is your biological 6 plausibility opinion that talc inhaled 7 and in the lungs causes inflammation in 8 the ovaries that can lead to ovarian 9 cancer? 10 A. There's plausibility for 11 that, yes. 12 Q. And can you cite for me any 13 published authority that says that talc 14 inhaled in the lungs will cause 15 inflammation in the ovaries that can lead 16 to ovarian cancer? 17 A. There's multiple parts of 18 that question. 19 Q. That's a very specific 20 question to that very specific subject 21 area. Can you cite to me any published 22 literature that says that? 23 MS. O'DELL: Would you mind 24 repeating the full question or</p>	<p style="text-align: right;">Page 304</p> <p>1 cadmium. 2 Q. So in other words a lot of 3 particles besides talc, according to you, 4 can cause inflammation of the lungs, 5 correct? 6 A. Many do. There are others 7 that do not, like titanium dioxide which 8 were used in many studies as a control. 9 Q. And those nanoparticles, 10 those air particles -- 11 A. In fact -- 12 Q. -- those diesel particles. 13 A. I'm sorry. 14 Q. Okay. And those 15 nanoparticles, those diesel particles, 16 air particles that can cause inflammation 17 in the lungs, will also cause 18 inflammation in the ovaries, correct? 19 MS. O'DELL: Objection to 20 form. 21 THE WITNESS: I said they 22 will cause inflammation 23 systemically. I did not indicate 24 the ovaries.</p>
<p style="text-align: right;">Page 303</p> <p>1 read it. 2 THE WITNESS: Any published 3 authority that says that -- that 4 says that talc inhaled in the 5 lungs will cause inflammation in 6 the ovaries that can lead to 7 ovarian cancer. 8 For that particular, and 9 that specific of a question, I 10 cannot cite you. 11 BY MR. HEGARTY: 12 Q. You have published 13 extensively on particulates in the air 14 causing inflammation in the lungs, 15 correct? 16 A. In the lungs and 17 systemically. 18 Q. And those particulates 19 include? 20 A. Air particulates; 21 particulate matter, called PM, ambient 22 PM; diesel exhaust particles. I'm also 23 going to go to my CV. Nanoparticles, 24 metal nanoparticles, specifically</p>	<p style="text-align: right;">Page 305</p> <p>1 BY MR. HEGARTY: 2 Q. Well, there's no -- there's 3 nothing unique about talc particles 4 versus the other particles you mentioned, 5 correct? 6 MS. O'DELL: Object to form. 7 THE WITNESS: Size, chemical 8 composition, they -- they -- 9 particles -- particles are -- they 10 can -- they can be different and 11 they can be the same. So many 12 studies use model particles to 13 look at a negative effect like in 14 the Shukla study where they used 15 titanium dioxide particles of a 16 similar size in their -- as a 17 control and got no gene expression 18 changes. 19 Particles in the air, if 20 you're looking at -- there are 21 many factors that go into how a 22 particle behaves, including size, 23 including composition, including 24 morphology.</p>

<p style="text-align: right;">Page 306</p> <p>1 BY MR. HEGARTY: 2 Q. Well, by your methodology, 3 any particle inhaled that causes 4 inflammation in the lungs is biologically 5 plausible, can lead to ovarian cancer, 6 correct? 7 MS. O'DELL: Object to form. 8 THE WITNESS: No, it can -- 9 sorry. It can lead to 10 inflammation systemically. 11 BY MR. HEGARTY: 12 Q. That can lead to ovarian 13 cancer, correct? 14 A. Inflammation -- 15 MS. O'DELL: Object to the 16 form. 17 Go ahead. 18 THE WITNESS: Sorry. 19 MS. O'DELL: Sorry. 20 THE WITNESS: Inflammation 21 is responsible for -- in my 22 opinion, is the underlying 23 mechanism, a key underlying 24 mechanism for the association for</p>	<p style="text-align: right;">Page 308</p> <p>1 same inflammation that you believe that 2 talc does, correct? 3 A. Inflammation is 4 characterized by certain key components. 5 Inflammation -- whether it's an 6 inflammation in the ovary or an 7 inflammation in the lung or inflammation 8 in the kidney, inflammation is an immune 9 response. And it's going to involve key 10 cells, including the macrophage, the 11 neutrophil, the natural killer cell, all 12 of which can produce reactive oxygen 13 species -- well, primarily the 14 macrophages and neutrophils produce 15 oxygen radicals. 16 However, the natural killer 17 cell, they all produce cytokines, which 18 can produce inflammation. So 19 inflammation is characterized by the same 20 components. 21 Q. And you can't cite for me 22 any different components of the 23 inflammation caused by cadmium as you 24 believe the inflammation that is caused</p>
<p style="text-align: right;">Page 307</p> <p>1 ovarian cancer, yes. 2 BY MR. HEGARTY: 3 Q. And that mechanism can be 4 initiated by any particle inhaled into 5 the lungs, correct? 6 A. No, it's -- 7 MS. O'DELL: Objection to 8 form. 9 THE WITNESS: Sorry. 10 Well, as -- again, as I 11 stated, it depends on the -- it 12 depends on the particle. For 13 example, titanium dioxide will not 14 produce inflammation in the lungs. 15 However, other particles, many 16 other particles, including 17 cadmium, cadmium oxide particles 18 do cause inflammation, as well as 19 asbestos does, as well as talc has 20 been shown to. 21 They can all produce 22 inflammation or oxidative stress. 23 BY MR. HEGARTY: 24 Q. Cadmium particles induce the</p>	<p style="text-align: right;">Page 309</p> <p>1 by talc, correct? 2 A. When I measured inflammatory 3 responses to the inhalation of cadmium 4 nanoparticles, I looked for the standard 5 inflammatory markers. So I measured in 6 the lung and in the circulation. I 7 measured the percentages of neutrophils, 8 which is a key indicator, key criteria 9 for inflammation. I determined 10 macrophage numbers as well as function in 11 terms of their ability to phagocytose, in 12 their ability to produce reactive oxygen 13 species. And I looked for lung injury, 14 as measured by lactose, lactate 15 dehydrogenase. 16 So when one looks for 17 inflammation in the body, whether it's an 18 animal or a human, C-reactive protein, 19 you are going to be looking for all the 20 same markers. 21 Q. You identified, based on 22 your opinion, no difference in the 23 inflammation caused by talc and the 24 inflammation caused by cadmium, correct?</p>

<p style="text-align: right;">Page 310</p> <p>1 A. I did not do talc inhalation 2 in my laboratory. The studies 3 indicate -- looked for the same thing. 4 They look for changes in gene expression 5 of activating transcription factors. 6 They did in the Shukla study. 7 They look for the percentage 8 of neutrophils. They look for macrophage 9 activation. We all look at the same 10 thing when coming to the conclusion of 11 inflammation. 12 Q. And according to you, talc 13 and cadmium act similarly with regard to 14 inducing inflammation in the lungs? 15 MS. O'DELL: Objection to 16 form. 17 THE WITNESS: Do they act 18 similarly? Well, I think I 19 answered that question. 20 Inflammation is -- is the -- 21 inflammation is modified by the 22 same components, the same soluble 23 factors, the same cell type 24 factors, including macrophages and</p>	<p style="text-align: right;">Page 312</p> <p>1 because I haven't investigated 2 that literature. 3 But inflammation -- 4 inflammation doesn't change. It 5 can get out of the particular 6 local organ. I don't think that 7 cadmium has been investigated in 8 terms of the ovary. It's 9 certainly been investigated in 10 terms of the kidney, which is 11 local -- which is systemically a 12 distant organ from the local 13 target, which is the lung. And it 14 can cause inflammation in the 15 kidney. 16 BY MR. HEGARTY: 17 Q. You haven't identified any 18 differences between the inflammation 19 caused by other particulates and the 20 inflammation caused by talc, correct? 21 MS. O'DELL: Objection to 22 form. 23 THE WITNESS: Inflammation 24 is inflammation.</p>
<p style="text-align: right;">Page 311</p> <p>1 neutrophils, dendritic cells, 2 whatever. So inflammation, 3 whether it's acute or chronic 4 inflammation used the same 5 parameters. 6 We call inflammation -- we 7 call inflammation when you -- in a 8 tissue or in organs when you see 9 these characteristics. And we say 10 these are markers indicative. 11 These are pathologies 12 indicative -- these are -- of an 13 inflammatory response. 14 BY MR. HEGARTY: 15 Q. So according to your 16 opinion, that's biologic plausibility 17 between cadmium exposure and ovarian 18 cancer? 19 MS. O'DELL: Objection to 20 form. 21 THE WITNESS: I would have 22 to do more research on that to be 23 able to say that. I would not say 24 biological plausibility, only</p>	<p style="text-align: right;">Page 313</p> <p>1 BY MR. HEGARTY: 2 Q. You referred to fragrances. 3 A. I'm sorry. Could you give 4 me a page? 5 Q. Over on Page 12. You cite 6 to a single study that discusses what 7 exposure levels of these fragrances have 8 been shown to induce a biologically 9 plausible effect in the ovary. 10 MS. O'DELL: Object to the 11 form. 12 THE WITNESS: Many of these 13 fragrances, many of these 14 chemicals within a specific 15 fragrance, it can consist of maybe 16 150 or even more chemicals within 17 any one given fragrance. Many of 18 them have been shown to cause 19 inflammation. 20 BY MR. HEGARTY: 21 Q. Have any of the chemicals in 22 the fragrances that you looked at been 23 reported in the medical literature to 24 induce inflammation in the ovaries?</p>

<p style="text-align: right;">Page 314</p> <p>1 A. No one specifically -- to my 2 knowledge, no one specifically looked at 3 inflammation in the ovaries. But again, 4 if you go back to the idea of 5 inflammation being caused by a particle 6 at a local site and then having the 7 potential -- or having the capacity I 8 should say, to -- to have that 9 inflammation go to a distant -- a more 10 distant site. 11 So the fact that no one has 12 looked at it does not delete the fact 13 that certainly inflammation can get to 14 distant sites, including the ovary. 15 Q. Well, what is the dose of 16 nickel or -- and cobalt and chromium 17 individually that must -- that the woman 18 must be exposed to in vivo to induce 19 inflammation in the ovaries? 20 MS. O'DELL: Object to the 21 form. Asked and answered. 22 THE WITNESS: There are -- 23 as I said, there's really -- one 24 particle, one piece can start the</p>	<p style="text-align: right;">Page 316</p> <p>1 metals, but there's also -- if you look 2 at nickel and it's a micronutrient, so 3 you can have very, very, very tiny 4 amounts in the body -- very tiny. And it 5 can be used as a micronutrient. 6 You can have lead, but that 7 should not be in the body at all. And 8 there is no safe level of lead. So 9 despite what the regulatory agencies say, 10 there is no safe level which is what 11 their conclusion is moving towards. 12 And -- so a metal is not a 13 metal is not a metal. 14 Now, when you look at these 15 three metals, so for example you have 16 nickel which is classified as a 1A 17 carcinogen, but -- 18 Q. I'll withdraw the question. 19 You're not -- Doctor, you're not 20 answering my question. 21 MS. O'DELL: She is 22 answering your question. 23 MR. HEGARTY: No, she is 24 not.</p>
<p style="text-align: right;">Page 315</p> <p>1 process for inflammation. 2 BY MR. HEGARTY: 3 Q. So it -- 4 A. It could be one. 5 Q. -- it's your opinion that 6 one particle of nickel will induce 7 inflammation in the ovaries? 8 MS. O'DELL: Objection. 9 BY MR. HEGARTY: 10 Q. Is that correct? 11 A. Will? I can't -- I haven't 12 gone through the literature, but could, 13 certainly. 14 Q. And what literature can you 15 cite that would say that one particle of 16 nickel could cause inflammation in the 17 ovary? 18 A. It's my professional 19 judgment being an expert toxicologist in 20 the area of metals. 21 Q. Okay. Same question as to 22 cobalt and chromium. 23 A. Well, metals can't be lumped 24 together like that. Metals are indeed</p>	<p style="text-align: right;">Page 317</p> <p>1 MS. O'DELL: Yes, she is. 2 And if you don't -- let her 3 finish. 4 MR. HEGARTY: Okay. 5 We'll -- we'll call Judge Pisano 6 and he'll see if we're asking the 7 question -- if she's answering the 8 question. 9 MS. O'DELL: Are you 10 threatening the witness by saying 11 that? 12 MR. HEGARTY: No, I'm 13 talking to you. We'll go off the 14 record -- 15 MS. O'DELL: You're 16 threatening the witness and -- no, 17 we're not going off the record. 18 MR. HEGARTY: Go off the 19 record, let's go off the record. 20 MS. O'DELL: No, we are not 21 going off the record. 22 MR. HEGARTY: Yes, let's go 23 off the record. 24 MS. O'DELL: If she's</p>



<p style="text-align: right;">Page 318</p> <p>1     answering your question, she --</p> <p>2     she gets the right to finish her</p> <p>3     answer. You don't cut her off,</p> <p>4     Mark.</p> <p>5     MR. HEGARTY: Let's go off</p> <p>6     the record.</p> <p>7     MS. O'DELL: No, we're not</p> <p>8     going off the record. She's</p> <p>9     finishing her answer.</p> <p>10    MR. HEGARTY: Let's go off</p> <p>11    the record. I'm not --</p> <p>12    MS. O'DELL: And then you</p> <p>13    can ask her another question.</p> <p>14    MR. HEGARTY: Let's go off</p> <p>15    the record. It's my deposition.</p> <p>16    MS. O'DELL: No. It's your</p> <p>17    deposition, but it's not fair to</p> <p>18    mistreat this witness if she is</p> <p>19    answering your question.</p> <p>20    MR. HEGARTY: I'm not</p> <p>21    mistreating the witness.</p> <p>22    MS. O'DELL: Yes, you are.</p> <p>23    MR. HEGARTY: We'll go off</p> <p>24    the record and call Judge Pisano.</p>	<p style="text-align: right;">Page 320</p> <p>1     either inhaled or applied to the perineum</p> <p>2     will induce inflammation in the ovaries?</p> <p>3     A.    It's my opinion that it</p> <p>4     could.</p> <p>5     Q.    What literature do you have</p> <p>6     to support that opinion?</p> <p>7     A.    My professional opinion as a</p> <p>8     toxicologist in metals with over</p> <p>9     30 years.</p> <p>10    Q.    Next question. Is it your</p> <p>11    opinion that one particle of cobalt,</p> <p>12    either inhaled or applied to the</p> <p>13    perineum, will induce inflammation in the</p> <p>14    ovaries?</p> <p>15    A.    Again, it's my opinion that</p> <p>16    it -- it could. It has the biological</p> <p>17    plausibility to, because inflammation,</p> <p>18    although not as toxic in many ways as</p> <p>19    it's classified as a 2B -- 2B by IARC</p> <p>20    is -- has the potential -- does cause</p> <p>21    inflammation, and that inflammation can</p> <p>22    leave the site of the target site.</p> <p>23    Q.    What authority do you have</p> <p>24    for that opinion?</p>
<p style="text-align: right;">Page 319</p> <p>1     MS. O'DELL: You are</p> <p>2     mistreating the witness by not</p> <p>3     allowing her to finish her --</p> <p>4     MR. HEGARTY: I withdrew the</p> <p>5     question.</p> <p>6     MS. O'DELL: Well, okay.</p> <p>7     The with -- the question was</p> <p>8     withdrawn. Ask a question, let</p> <p>9     her --</p> <p>10    MR. HEGARTY: No, we're off</p> <p>11    the record. We're going to call</p> <p>12    Judge Pisano.</p> <p>13    MS. O'DELL: Okay. Great.</p> <p>14    THE VIDEOGRAPHER: Off the</p> <p>15    record. The time is 3:21 p.m.</p> <p>16    Off the record.</p> <p>17    (Whereupon, a discussion was</p> <p>18    held off the record.)</p> <p>19    THE VIDEOGRAPHER: We are</p> <p>20    back on the record. The time is</p> <p>21    3:23 p.m.</p> <p>22    BY MR. HEGARTY:</p> <p>23    Q.    Dr. Zelikoff, is it your</p> <p>24    opinion that one particle of nickel</p>	<p style="text-align: right;">Page 321</p> <p>1     A.    My professional opinion.</p> <p>2     Q.    Is it your opinion that one</p> <p>3     particle of chromium, either inhaled or</p> <p>4     applied to the perineum, will induce</p> <p>5     inflammation in the ovaries?</p> <p>6     MS. O'DELL: Objection to</p> <p>7     the form.</p> <p>8     THE WITNESS: It depends on</p> <p>9     the form of the chromium.</p> <p>10    BY MR. HEGARTY:</p> <p>11    Q.    What form of chromium does</p> <p>12    it need to be?</p> <p>13    A.    A trivalent chromium</p> <p>14    which -- I'm sorry, hexavalent chromium</p> <p>15    which will then get into the cell, start</p> <p>16    the process and -- and convert to</p> <p>17    chromium-3, 4 and 5.</p> <p>18    Q.    That's chromium-6, correct?</p> <p>19    A.    Hexavalent chromium is</p> <p>20    chromium-6, right.</p> <p>21    Q.    Is it your opinion that one</p> <p>22    particle of chromium-6, either inhaled or</p> <p>23    applied to the perineum, will induce</p> <p>24    inflammation in the ovaries?</p>



<p style="text-align: right;">Page 322</p> <p>1 MS. O'DELL: Objection to 2 form. 3 THE WITNESS: It could, 4 because inflammation again could 5 leave the target site. And it 6 depends on the form of the metal. 7 So we have soluble metals -- 8 I don't want to go on too long. 9 You have soluble metals and 10 insoluble metals. Some of them 11 are more toxic and more -- and 12 potentially more carcinogenic than 13 other forms. There are many salts 14 within those metals that you gave. 15 BY MR. HEGARTY: 16 Q. And what authority do you 17 have for the statement that one particle 18 of chromium, either inhaled or applied to 19 the perineum, will induce inflammation in 20 the ovaries? 21 A. My professional judgment. 22 Q. Will one particle of the 23 fragrance of the chemicals that you list 24 from the fragrances, either inhaled or</p>	<p style="text-align: right;">Page 324</p> <p>1 lumped. And particles oftentimes, 2 if they're different in size, if 3 they're different in chemical 4 structure, if they have iron or 5 don't have iron, you have -- you 6 may have differences. 7 BY MR. HEGARTY: 8 Q. Will one particle from 9 diesel exhaust, inhaled or applied to the 10 perineum, cause inflammation in the 11 ovary? 12 MS. O'DELL: Object to the 13 form. 14 THE WITNESS: Again, same 15 answer, it could. Depends on the 16 particle size, the particle type, 17 the particle morphology. And it 18 has the potential to induce 19 inflammation as shown in cells. 20 And can produce an oxidant state. 21 BY MR. HEGARTY: 22 Q. Doesn't inflammation just 23 reflect the body's normal response to the 24 presence of the particles?</p>
<p style="text-align: right;">Page 323</p> <p>1 applied to the perineum, cause 2 inflammation to the ovaries? 3 MS. O'DELL: Objection to 4 the form. 5 THE WITNESS: If -- I -- I 6 don't have the knowledge, I don't 7 have the literature knowledge to 8 answer that question. 9 BY MR. HEGARTY: 10 Q. Will one -- will one 11 particle of -- of cadmium, either inhaled 12 or applied to the perineum, cause 13 inflammation in the ovaries? 14 A. It can cause -- 15 MS. O'DELL: Objection to 16 form. You can answer. 17 THE WITNESS: It can cause 18 inflammation in the area if it's 19 inhaled in the lung and that 20 inflammation can get out 21 systemically. 22 Now it depends, again, on 23 the size of the particle. Metals, 24 as I said before, cannot be</p>	<p style="text-align: right;">Page 325</p> <p>1 A. There are two -- there are 2 two forms of -- well, there are multiple 3 forms of inflammation. But the two that 4 are of concern and in -- in response to 5 your question, is that they are acute 6 inflammation and there is chronic 7 inflammation. 8 And with acute inflammation, 9 the first response to a foreign -- a 10 foreign particle or an antigen on a 11 bacterial cell or an infectious agent, is 12 for the body to mount an immune response. 13 How it does that is through 14 the same cell types that I just 15 mentioned. Polymorphonucleocytes, also 16 known as neutrophil. Macrophages, and 17 those are the two key players, but 18 natural killer cells all come into it. 19 That involves the innate 20 immune system. And so the first thing to 21 protect the body, whether it's a viral 22 infection or whether it's a bacterial 23 infection or whether it's a foreign 24 particle, is to mount that kind of immune</p>

<p style="text-align: right;">Page 326</p> <p>1 response to kill or negatively impact 2 that particular particle. 3 That will then -- that's an 4 innate immune response being active. 5 That will then, in some cases, upregulate 6 the T-cell and -- and humoral or -- and 7 cell-mediated immune response. 8 Now, that is, in terms of 9 cancers and in terms of tumors, that is 10 called immunosurveillance and that's the 11 first thing. And you're absolutely 12 right. The purpose of the immune system 13 is to protect the body. That is the 14 function. 15 However, there are three 16 stages or three types of processes for 17 the immune system in carcinogenesis. The 18 second being immuno equilibrium. But the 19 part that is the last part is that the 20 tumor can actually quiet or cause 21 immunosenescence of the immune system. 22 So in a chronic 23 inflammation, it does not always act in 24 the best interest of the -- of the host</p>	<p style="text-align: right;">Page 328</p> <p>1 inflammation. Not that they involve 2 different cell types or different 3 mechanisms. But they are called, in 4 terms of timing or temporality, acute 5 which will kill whatever right away and 6 then chronic which unfortunately keeps 7 playing back on itself and the 8 inflammation will continue. 9 Q. Granulomas which you just 10 mentioned don't cause cancer, correct? 11 A. Granulomas do not -- I'm 12 sorry. 13 Q. Granulomas which you just 14 mentioned don't cause cancer, correct? 15 A. Granulomas are in response 16 to a foreign body. In the case of 17 asbestos or in the case of another type 18 of fiber, macrophage will come over and 19 their normal process in what we call 20 innate immunity is to engulf the fiber. 21 And unfortunately, many times the fiber 22 cannot be engulfable or the particle 23 cannot be engulfable. 24 And so many macrophage will</p>
<p style="text-align: right;">Page 327</p> <p>1 but in the best interest of the tumor. 2 So your -- the answer to 3 your question is yes, that's the function 4 of it. But it can behave, it's a 5 two-prong sword. 6 Q. You said there are multiple 7 types of inflammation and you listed two 8 types: Acute and chronic. Are there any 9 other types besides those two? 10 A. Well, you have the reactions 11 to those inflammation in terms of having 12 a foreign body reaction. That is part of 13 an inflammatory response. So in terms of 14 temporality or timing, inflammation is 15 acute and is chronic. 16 What occurs during that 17 time, such as a foreign body reaction 18 where macrophages all come together and 19 engulf the particle or the fiber and try 20 to keep it within a localized space, that 21 is a process that can occur within 22 inflammation. 23 So my answer to you is that 24 there are two major types of</p>	<p style="text-align: right;">Page 329</p> <p>1 come over, and they will try to engulf it 2 as a body. And that is called a 3 granulomatous reaction. 4 And that's what happens 5 during tuberculosis when the organism 6 forms, many macrophages come over to kill 7 the organism, but it can't, and so they 8 form granulomas. 9 Q. Doctor, listen to my 10 question. I didn't ask you what a 11 granuloma was. I asked you, granulomas 12 don't cause cancer, correct? 13 MS. O'DELL: Object to form. 14 THE WITNESS: There is no 15 literature to my knowledge that 16 shows a granuloma, meaning immune 17 response, forming macrophages 18 engulfing, can cause cancer. 19 BY MR. HEGARTY: 20 Q. And a reaction to 21 inflammation can include the development 22 of fibrosis or scar tissue, correct? 23 A. That is a long-term chronic 24 response associated with chronic</p>

<p style="text-align: right;">Page 330</p> <p>1 inflammation.</p> <p>2 Q. And there's no literature</p> <p>3 linking fibrosis to cancer, correct?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 THE WITNESS: My</p> <p>7 professional opinion is that there</p> <p>8 is literature -- let me just read</p> <p>9 over the question, please.</p> <p>10 So fibrosis is produced by</p> <p>11 release of factors from the</p> <p>12 macrophage. And it causes</p> <p>13 scarring within that particular</p> <p>14 target organ.</p> <p>15 Now, whether or not that --</p> <p>16 those -- that scarring can</p> <p>17 actually make that site more</p> <p>18 vulnerable to cancer, like in the</p> <p>19 case of hepatitis, where you get</p> <p>20 scarring, and you get cancer as a</p> <p>21 result of that particular</p> <p>22 fibrosis, but they are two</p> <p>23 different diseases.</p> <p>24 But whether the area of</p>	<p style="text-align: right;">Page 332</p> <p>1 A. Fibrosis does not morph or</p> <p>2 turn into cancer. That is correct.</p> <p>3 Q. In Section 12 -- I'm sorry.</p> <p>4 On Page 12, under your section</p> <p>5 "exposure," talc particle access to the</p> <p>6 body.</p> <p>7 Do you see that section?</p> <p>8 A. Is this Paragraph 1, 2, or</p> <p>9 3?</p> <p>10 Q. Well, I'm looking just at</p> <p>11 the Section Number 4 right now.</p> <p>12 A. Yes. Okay. Section Number</p> <p>13 6 is on Page 12.</p> <p>14 Q. Section 6. I'm sorry. I</p> <p>15 had those transposed.</p> <p>16 A. And please repeat your</p> <p>17 question.</p> <p>18 Q. You never -- prior to being</p> <p>19 contacted by counsel for plaintiffs, you</p> <p>20 never looked at the studies reporting on</p> <p>21 whether talc can reach the ovaries via</p> <p>22 inhalation or perineal application,</p> <p>23 correct?</p> <p>24 A. I did not study the</p>
<p style="text-align: right;">Page 331</p> <p>1 fibrosis creates a more vulnerable</p> <p>2 tissue base that can -- that can</p> <p>3 progress or go to cancer is a</p> <p>4 question that there is some</p> <p>5 examples of, but -- in the liver</p> <p>6 in particular.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Well, there's no literature</p> <p>9 reporting an increased risk of cancer in</p> <p>10 any organ because there's fibrosis in</p> <p>11 that organ, correct?</p> <p>12 A. What I'm saying is that in</p> <p>13 terms of the liver and in terms of</p> <p>14 fibrosis, let's say from ethanol or</p> <p>15 acetaminophen ingestion, you get fibrosis</p> <p>16 which is a whole disease or symptomology</p> <p>17 by itself, and then you have cancer,</p> <p>18 which is another disease. But what I'm</p> <p>19 saying is that in the area where the</p> <p>20 injury and the fibrosis occurs, in the</p> <p>21 liver there is a higher risk of getting</p> <p>22 cancer.</p> <p>23 Q. Fibrosis doesn't morph or</p> <p>24 turn into cancer?</p>	<p style="text-align: right;">Page 333</p> <p>1 literature or review the literature prior</p> <p>2 to being contacted. But I studied it and</p> <p>3 reviewed it extensively after being</p> <p>4 contacted.</p> <p>5 Q. On Page 12 of the last</p> <p>6 paragraph -- I'm sorry -- second-to-last</p> <p>7 paragraph, which begins, "A common</p> <p>8 exposure route."</p> <p>9 Do you see that paragraph?</p> <p>10 A. I do. Thank you.</p> <p>11 Q. You write, "Again, a common</p> <p>12 exposure route for cosmetic talc is via</p> <p>13 the dermal route including vaginally</p> <p>14 after perineal application."</p> <p>15 A. Yes.</p> <p>16 Q. Is it your testimony that</p> <p>17 there's biologic plausibility with talc</p> <p>18 applied to the skin?</p> <p>19 A. Applied to the skin, talc</p> <p>20 does not -- is not absorbed into the skin</p> <p>21 or through the skin, although there is</p> <p>22 some question as to whether if there's</p> <p>23 injury or scratch or openings in the</p> <p>24 skin, whether the talc can penetrate.</p>

<p style="text-align: right;">Page 334</p> <p>1 But in and of itself talc cannot 2 penetrate through the skin. 3       However, we're not -- when 4 we're talking about perineal or vaginal 5 application, you are not talking about an 6 epidermal subcutaneous keratinized skin. 7       Q. None of the studies that you 8 cite in this paragraph researched 9 particle transport through the 10 reproductive tract through perineal 11 application, correct? 12       MS. O'DELL: Object to the 13 form. 14       THE WITNESS: These -- it is 15 extremely technically difficult, 16 from my knowledge as an animal 17 toxicologist, to do perineal 18 application to a mouse. 19 BY MR. HEGARTY: 20       Q. I'm going to withdraw the 21 question. Doctor, you will not respond 22 to my question. My question is simply, 23 none of the studies that you cite in this 24 paragraph researched particle transport</p>	<p style="text-align: right;">Page 336</p> <p>1 the form. 2 BY MR. HEGARTY: 3       Q. Correct? 4       MS. O'DELL: Excuse me. You 5 may answer his question any way 6 you'd want to, Doctor. 7       THE WITNESS: None of these 8 that I have stated on Page 12 9 refer to perineal exposure in the 10 second paragraph in terms of 11 Venter, Iturralde, Sjosten and 12 Heller. 13       However, on Page -- on Page 14 13, there is a study by Keskin, 15 who used rats and did a vaginal or 16 perineum to talc. 17 BY MR. HEGARTY: 18       Q. I'm going to move to strike. 19 We're going to go off the record. 20       MR. HEGARTY: We're going to 21 call Judge Pisano. There's no 22 reason to add that additional part 23 to the answer to that question. 24 And I'm not -- I'm tired of that</p>
<p style="text-align: right;">Page 335</p> <p>1 through the reproductive tract through 2 perineal application. That's correct? 3       A. There is a study, and I'm 4 afraid the name of the author does not 5 come to me. So allow me to look at my 6 report. 7       Q. And I'm just talking about 8 the authorities that you cite in the 9 second paragraph beginning, "A common 10 exposure route." 11       MS. O'DELL: Feel free to 12 look at your report if you need 13 to, Doctor. 14       THE WITNESS: I understand. 15 On Page 13, animal models -- 16 BY MR. HEGARTY: 17       Q. Doctor, that's not my 18 question. My question is in the 19 paragraph that I referenced beginning a 20 common exposure route, none of those 21 authorities looked at transport of the 22 particles via application of those 23 particles to the perineum? 24       MS. O'DELL: Objection to</p>	<p style="text-align: right;">Page 337</p> <p>1 happening. So we'll call him 2 unless you're going to talk to the 3 witness. 4       MS. O'DELL: Is your 5 objection she didn't answer your 6 question? Because she -- you 7 asked her about the paragraph. 8 She said "no; however" -- 9       MR. HEGARTY: We're off the 10 record. 11       MS. O'DELL: No, we're not 12 off the record. 13       MR. HEGARTY: We're off the 14 record. 15       MS. O'DELL: No, we -- 16       MR. HEGARTY: We're going 17 off the record. 18       MR. LOCKE: We are off. Let 19 me throw out something. We've got 20 seven hours. I think there's a 21 plan here to stall, and we need to 22 do a better job of keeping things 23 moving, or we are going to have to 24 ask the court for more time.</p>

<p style="text-align: right;">Page 338</p> <p>1 MR. HEGARTY: Let's go off 2 the record. 3 MS. O'DELL: The suggestion 4 that there's -- let me just -- 5 before we go off the record, the 6 suggestion that there's somehow a 7 plan to -- is incorrect, and 8 improper. So if you want to go 9 off the record, I think you've got 10 an answer to your question, which 11 was, "No, not in the paragraph." 12 However, she has a right to 13 point to evidence in her report. 14 That's perfectly appropriate. 15 MR. HEGARTY: We'll let 16 Judge Pisano decide. We'll go off 17 the record. 18 THE VIDEOGRAPHER: The time 19 is 3:39 p.m. Going off the 20 record. 21 (Short break.) 22 THE VIDEOGRAPHER: The time 23 is 4:04 p.m. Back on the record. 24 MR. HEGARTY: We're back on</p>	<p style="text-align: right;">Page 340</p> <p>1 have looked at transport of dry powder 2 talc to the perineum showing that the -- 3 that talc transports to the ovaries, 4 correct? 5 MS. O'DELL: Object to the 6 form. 7 THE WITNESS: When we say -- 8 when you say talc, you're 9 referring to talcum powder 10 products? 11 BY MR. HEGARTY: 12 Q. Correct, correct. 13 A. That's correct to my 14 knowledge. 15 Q. And are you aware that talc 16 is in toilet paper? 17 A. Yes, I just learned that 18 recently. 19 Q. Can talc in toilet paper 20 migrate to the ovaries? 21 MS. O'DELL: Object to the 22 form. 23 THE WITNESS: Can -- my 24 knowledge is that talc in toilet</p>
<p style="text-align: right;">Page 339</p> <p>1 the record and we're going to 2 continue without calling Judge 3 Pisano at this time. But we do 4 reserve the right to ask Judge 5 Pisano for more time based on our 6 belief that Dr. Zelikoff has many 7 occasions over the course of this 8 deposition not been responsive to 9 the questions asked and as a 10 result has -- has wasted the 11 defendant's time and to our 12 prejudice. 13 So -- but we're going to go 14 forward and see if we can finish 15 this deposition. 16 MS. O'DELL: Plaintiffs will 17 obviously oppose that -- that 18 motion. Dr. Zelikoff has been 19 responsive to your questions. 20 BY MR. HEGARTY: 21 Q. Dr. Zelikoff, we're talking 22 about the section on talc particle's 23 access to the body. There have been no 24 studies in either animals or humans that</p>	<p style="text-align: right;">Page 341</p> <p>1 paper is -- is bound to the 2 other -- the other components 3 there. So unless it becomes 4 bioavailable it cannot migrate 5 from the toilet paper. 6 BY MR. HEGARTY: 7 Q. How about talc -- talc in 8 soap, is there talc in soaps? 9 A. To my knowledge there is. 10 Q. Can talc in soaps, if 11 applied to the perineum, migrate to the 12 ovaries? 13 A. If it becomes -- 14 MS. O'DELL: Object to form. 15 THE WITNESS: If it becomes 16 bioavailable. Likely bound up to 17 the other components. 18 BY MR. HEGARTY: 19 Q. When you say bioavailable, 20 what do you mean? 21 A. To me, "bioavailable" means 22 that the body can see it, and it 23 becomes -- it becomes -- it has access to 24 biological responsiveness.</p>



<p style="text-align: right;">Page 342</p> <p>1 Q. And do you know a 2 Dr. Benjamin Neel at NY University -- New 3 York University? 4 A. Dr. Neel, isn't he the head 5 of the cancer center? 6 Q. He is. 7 A. He is the head of the cancer 8 center. 9 Q. Do you know him? 10 A. I do not know him. 11 Q. Does he know more about 12 cancer biology than you do? 13 MS. O'DELL: Object to the 14 form. 15 THE WITNESS: I've not seen 16 his CV. I would assume as head of 17 the cancer center, that he 18 probably does. Since that is not 19 my area of study. 20 BY MR. HEGARTY: 21 Q. Are dose-response 22 relationships important in evaluating 23 potential carcinogenicity of a substance? 24 A. Dose-response --</p>	<p style="text-align: right;">Page 344</p> <p>1 Q. You need a specific page? 2 Over on Page 16. Over the course of this 3 page and carrying over to the next page, 4 you cite a number of studies that refer 5 to talc causing pleural inflammation, 6 correct? 7 A. Yes. 8 Q. Talc causing granulomas, 9 correct? 10 A. Yes. 11 Q. Talc causing pulmonary 12 interstitial fibrosis, correct? 13 A. Talcum powder can do those 14 things, yes. 15 Q. And talc causing 16 carcinogenic activity in the lungs, 17 correct? 18 A. Are you referring to a 19 specific line? 20 Q. No, I'm not referring to a 21 specific line. I'm talking about 22 generally from this part of your report. 23 A. In general, this is the 24 section on inhalation. I'm talking</p>
<p style="text-align: right;">Page 343</p> <p>1 dose-responses are -- contribute to, as I 2 said frequency, duration, exposure route. 3 They all contribute to carcinogenicity. 4 Q. In other words, in 5 evaluating the carcinogenicity of a 6 substance, it's important to look at dose 7 relationships, correct? 8 A. Are you speaking about 9 dose-response, or more than one dose? 10 Q. Let me ask it again. In 11 evaluating the substance for 12 carcinogenicity purposes, it's important 13 to look at dose-response relationships, 14 correct? 15 A. It's important to look at 16 dose-response relationships, but it's not 17 the only factor, is what I'm saying. 18 Q. In your report, you cite a 19 number of reactions to talc that have 20 been reported, pleural inflammation, 21 granulomas, pulmonary 22 interstitial fibrosis -- 23 A. What page are you referring 24 to?</p>	<p style="text-align: right;">Page 345</p> <p>1 about -- yes, I'm talking about talcum 2 powder and its ability to bring about 3 changes in the lungs that could lead to 4 carcinogenic -- carcinogenesis. 5 Q. Of the reactions that we 6 just talked about, have any of those been 7 reported in women using talc on the 8 perineum? 9 A. There have been no studies 10 to my knowledge showing that application 11 of perineal talc can produce -- produces 12 lesions in the lungs. 13 Q. And there's been no studies 14 that you are -- of which you are aware 15 that have reported findings of granulomas 16 in women using talc in the perineum, 17 correct? 18 A. There is evidence of 19 inflammation clearly, but there -- to my 20 knowledge, I have not seen any of the 21 literature which shows a granuloma in the 22 ovary. 23 Q. What studies have you seen 24 that have reported seeing inflammation in</p>



<p style="text-align: right;">Page 346</p> <p>1 the ovaries of women using talc on the 2 perineum? 3 MS. O'DELL: Object to the 4 form. 5 THE WITNESS: I'm just 6 trying to find the section. 7 There were many studies, I 8 can't right now, without finding 9 it in my report, identify any one 10 in particular. 11 BY MR. HEGARTY: 12 Q. Well, sitting here today, 13 can you cite any study that has reported 14 on finding inflammation of the ovaries 15 following perineal application of talc? 16 A. As I said, there are many -- 17 there are many examples in animal models 18 that was not perineal, that was vaginal, 19 as you stated. 20 There were studies -- 21 study -- an early study which identified 22 talcum powder particles in the ovary with 23 inflammatory responsiveness or 24 inflammatory responses. That was a</p>	<p style="text-align: right;">Page 348</p> <p>1 disease. 2 Q. Okay. Rheumatoid arthritis 3 does not increase the risk of cancer, 4 correct? 5 A. Rheumatoid arthritis, for 6 what's known now, does not increase the 7 risk of cancer. 8 Q. Psoriasis is another chronic 9 inflammatory process, correct? 10 A. Another autoimmune disease 11 and another inflammatory process, yes. 12 Q. Having psoriasis does not 13 increase the risk of any form of cancer, 14 correct? 15 A. Not that -- not that we know 16 with the current knowledge. 17 Q. So just having chronic 18 inflammation does not mean cancer will 19 develop, correct? 20 MS. O'DELL: Object to the 21 form. 22 THE WITNESS: Just having 23 chronic inflammation does not have 24 to indicate. It's one -- again,</p>
<p style="text-align: right;">Page 347</p> <p>1 very -- that was a very early study. I'm 2 not sure if it was Hamilton or Henderson. 3 If I may. 4 I'm sorry it's not coming to 5 mind now. 6 Q. Okay. Over on Page 20 you 7 discuss the role of the immune system -- 8 A. Yes, sir. 9 Q. -- correct? 10 A. I see that, yes. 11 Q. You agree that it's not 12 generally accepted by the medical or 13 scientific communities that all cancers 14 are caused by chronic inflammation, 15 correct? 16 A. There are other mechanisms 17 that are associated with carcinogenesis 18 and the process of carcinogenesis. If 19 you'd like, I can identify those. 20 Q. You agree that there are 21 types of chronic inflammation that are 22 not related to cancer. Rheumatoid 23 arthritis is one, correct? 24 A. That's an autoimmune</p>	<p style="text-align: right;">Page 349</p> <p>1 it's one mechanism that provides 2 biological plausibility for the 3 cancer induction. 4 If I may give an example. 5 BY MR. HEGARTY: 6 Q. Well, let me -- that's not 7 what I asked you for. 8 A. Okay. I thought I answered 9 your question. 10 Q. Does having pelvic 11 inflammatory disease cause ovarian 12 cancer? 13 A. The inflammation has been 14 linked with ovarian cancer, yes. 15 Q. In your opinion is there a 16 biologically plausible mechanism between 17 PID and ovarian cancer? 18 A. Well, PID is usually 19 associated with an infection. And what's 20 related to cancer and why there's higher 21 risk in inflammatory diseases of 22 endometriosis and pelvic inflammatory 23 disease is through a mechanism of 24 inflammation.</p>

<p style="text-align: right;">Page 350</p> <p>1 Q. Your biologically plausible 2 mechanism for talc and ovarian cancer is 3 inflammation, correct? 4 A. That's primary, yes. 5 Q. You make reference to MUC-1. 6 That's not your biological plausibility 7 mechanism, is it? 8 A. You mean MUC-1 -- 9 Q. Yes. 10 A. -- antibodies? 11 Q. Correct? 12 A. MUC-1, if I may explain it, 13 is mucin. And -- 14 Q. I don't want to interrupt. 15 I'm not after an explanation. I just 16 wanted to know whether it's part -- 17 whether the references you include in 18 your report to MUC-1 are included in your 19 biologically plausible opinion? 20 A. It is included in my -- in 21 reaching my opinion, yes. 22 Q. Is that a separate mechanism 23 from inflammation? 24 A. It is a separate mechanism</p>	<p style="text-align: right;">Page 352</p> <p>1 A. It's -- the only evidence 2 out there that addresses this is when 3 they do correlation studies with the 4 level of antibodies to MUC-1. And when 5 the antibody levels are decreased, then 6 you have -- they found that you have an 7 increased risk of ovarian cancer. 8 Q. There are no studies 9 reporting or correlating MUC-1 levels in 10 talcum powder users to ovarian cancer 11 risk, correct? 12 MS. O'DELL: Object to form. 13 THE WITNESS: Not to my 14 knowledge. 15 MS. O'DELL: Sorry. 16 BY MR. HEGARTY: 17 Q. And measuring MUC-1 is not 18 used to diagnose ovarian cancer, correct? 19 A. MUC-1 is also known as 20 CA-125, and it is used as a marker. 21 Q. My question is, is MUC-1 22 used to -- levels -- strike that. 23 Are MUC-1 levels used to 24 diagnose a woman with ovarian cancer?</p>
<p style="text-align: right;">Page 351</p> <p>1 from inflammation. It's seen in ovarian 2 cancer as a marker. And when you have -- 3 evidence has shown that if you have 4 antibodies to MUC-1, and if they're 5 decreased as is seen in response to talc, 6 that you will have less of an immune 7 response and protection. 8 Q. Can you cite for me any 9 study that has correlated MUC-1 levels 10 with ovarian cancer risk? 11 MS. O'DELL: Object to form. 12 THE WITNESS: They use it as 13 a marker. The literature uses 14 MUC-1 as a marker of cancer. Can 15 I cite you any studies that links 16 it with ovarian cancer? No, I 17 cannot. 18 BY MR. HEGARTY: 19 Q. Are there any studies that 20 link the levels of MUC-1 to ovarian 21 cancer risk? 22 A. Do you mean human studies or 23 animal? 24 Q. Yes, human studies only.</p>	<p style="text-align: right;">Page 353</p> <p>1 A. My response to that is MUC-1 2 is synonymous with CA-125. CA-125 is a 3 shed marker in the blood associated with 4 ovarian cancer, so yes. 5 Q. Okay. Is it your testimony 6 that for purposes of -- strike that. 7 Is it your testimony that 8 CA-125 levels are used to diagnose 9 ovarian cancer? 10 MS. O'DELL: Object to the 11 form. 12 THE WITNESS: I'm saying 13 that CA-125 is used as a 14 biological marker of progression, 15 extent, and intensity and whether 16 ovarian cancer is present. 17 BY MR. HEGARTY: 18 Q. My question is, in a woman 19 who comes in complaining of symptoms that 20 might be ovarian cancer, is CA-125 used 21 to diagnose ovarian cancer? 22 A. I'm sorry, I'm not a 23 physician. I can't answer that question 24 in terms of what -- what an OB/GYN or an</p>

<p style="text-align: right;">Page 354</p> <p>1 oncologist would do.</p> <p>2 Q. And measuring CA-125 levels</p> <p>3 does not give you any evidence of the</p> <p>4 etiology of the ovarian cancer, correct?</p> <p>5 A. Not to the etiology.</p> <p>6 However, it is an epithelial-associated</p> <p>7 protein.</p> <p>8 So if we are talking about</p> <p>9 epithelial, and we are talking about</p> <p>10 epithelial ovary carcinoma, it is related</p> <p>11 to -- to that.</p> <p>12 Q. Does all types -- do all</p> <p>13 types of inflammation irreparably damage</p> <p>14 tissue?</p> <p>15 A. Irreparably. Do you mean</p> <p>16 persistently without -- is there</p> <p>17 recovery?</p> <p>18 Q. No, my question is do all</p> <p>19 types of inflammation, all acute, all</p> <p>20 chronic inflammation, damage tissue where</p> <p>21 it's not repaired?</p> <p>22 A. Where it's not repaired?</p> <p>23 Q. Yes.</p> <p>24 A. No, you can have -- with</p>	<p style="text-align: right;">Page 356</p> <p>1 the systematic review of the</p> <p>2 literature as I have. But each</p> <p>3 doctor, I'm sure, makes their own</p> <p>4 opinion.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Can you cite any doctor who</p> <p>7 treats ovarian cancer or researches</p> <p>8 ovarian cancer who believes that the</p> <p>9 biological plausible mechanism of ovarian</p> <p>10 cancer is inflammation?</p> <p>11 A. I have not spoken to any</p> <p>12 doctors in that regard.</p> <p>13 Q. What does the inflammation</p> <p>14 in the ovary look like in your opinion</p> <p>15 from talc exposure?</p> <p>16 A. It looks like any other</p> <p>17 local target of inflammation, in that</p> <p>18 there are neutrophils, immune cells that</p> <p>19 migrate into the area. There are</p> <p>20 macrophages that migrate into the area.</p> <p>21 There can be higher levels of cytokines</p> <p>22 like interleukin and chemotactic factor,</p> <p>23 growth factor.</p> <p>24 Q. Such inflammation, if it was</p>
<p style="text-align: right;">Page 355</p> <p>1 acute inflammation, of course you can</p> <p>2 have repair of -- it's there to protect</p> <p>3 against the invader.</p> <p>4 Q. Does having inflammation in</p> <p>5 one organ or one tissue in the body</p> <p>6 always mean that other tissues in the</p> <p>7 body will be inflamed?</p> <p>8 A. It does not always mean</p> <p>9 that.</p> <p>10 Q. The medical community has</p> <p>11 not generally accepted that chronic</p> <p>12 inflammation is a cause of ovarian</p> <p>13 cancer, correct?</p> <p>14 MS. O'DELL: Objection to</p> <p>15 form.</p> <p>16 THE WITNESS: Again, I'm not</p> <p>17 quite sure what you mean by</p> <p>18 generally accepted. Everyone</p> <p>19 has -- every medical community has</p> <p>20 its own opinion. I'm sure there</p> <p>21 are many doctors who do embrace</p> <p>22 it. And I'm sure there are many</p> <p>23 doctors who do not. I'm not sure</p> <p>24 whether they've done the extent of</p>	<p style="text-align: right;">Page 357</p> <p>1 occurring would be visible, correct?</p> <p>2 A. Not necessarily. In a -- in</p> <p>3 a chronic -- first of all, you can get</p> <p>4 different time periods. So</p> <p>5 inflammation -- if it's chronic</p> <p>6 inflammation you are talking about one</p> <p>7 thing. And then you might see some</p> <p>8 remnants of the inflammation.</p> <p>9 But if you look at a period</p> <p>10 of time, you can miss the inflammatory</p> <p>11 response. It can be there, impact the</p> <p>12 cells and then be gone.</p> <p>13 Q. Even with chronic</p> <p>14 inflammation?</p> <p>15 A. With chronic inflammation,</p> <p>16 if you looked hard enough you would find</p> <p>17 the remnants of its presence and you will</p> <p>18 also likely find neutrophilic</p> <p>19 infiltration.</p> <p>20 Q. Has that --</p> <p>21 A. That does not last forever.</p> <p>22 Q. Has that ever -- that --</p> <p>23 those findings ever been reported in</p> <p>24 women using talc in the perineum?</p>

<p style="text-align: right;">Page 358</p> <p>1 A. The inflammatory response?</p> <p>2 Q. Correct.</p> <p>3 A. Or the infiltration? Not</p> <p>4 that I'm aware of. Not in my report.</p> <p>5 Q. How many applications of</p> <p>6 talc to the perineum does it take to</p> <p>7 cause chronic inflammation in the</p> <p>8 ovaries?</p> <p>9 A. That's -- that</p> <p>10 information -- that is not known how many</p> <p>11 applications, whether it could be one or</p> <p>12 it needs to be over a period of three</p> <p>13 years or a period of ten years. Some of</p> <p>14 the meta-analysis evaluations indicated</p> <p>15 that there were some temporal</p> <p>16 associations with it, and that it needed</p> <p>17 to be used longer than ten years, where</p> <p>18 you saw responsiveness. And others</p> <p>19 indicated less than ten years.</p> <p>20 So it's -- it's difficult to</p> <p>21 say, and it's also associated with the</p> <p>22 woman.</p> <p>23 Q. Does acute inflammation</p> <p>24 cause cancer?</p>	<p style="text-align: right;">Page 360</p> <p>1 Q. None of those inflammatory</p> <p>2 markers are tested to diagnose or monitor</p> <p>3 a woman for developing ovarian cancer,</p> <p>4 correct?</p> <p>5 A. To my knowledge, tumor</p> <p>6 necrosis factors, C-reactive protein,</p> <p>7 none of the interleukins are monitored.</p> <p>8 But again, I have to say</p> <p>9 that I'm not an OB/GYN and so I'm not --</p> <p>10 I'm not familiar with what their -- what</p> <p>11 they are using other than what's in the</p> <p>12 literature.</p> <p>13 Q. And no study has clinically</p> <p>14 correlated those markers with ovarian</p> <p>15 cancer or ovarian cancer risk, correct?</p> <p>16 MS. O'DELL: Objection to</p> <p>17 form.</p> <p>18 THE WITNESS: In looking at</p> <p>19 biological plausibility, which</p> <p>20 I'm -- which I'm focused on, the</p> <p>21 indication of those elevated</p> <p>22 levels as well as decreased levels</p> <p>23 of antioxidants are associated</p> <p>24 with inflammation and are</p>
<p style="text-align: right;">Page 359</p> <p>1 A. Acute inflammation has not</p> <p>2 been linked to my knowledge to cancer.</p> <p>3 As I said, it's used as an immune</p> <p>4 surveillance and protective mechanism as</p> <p>5 you pointed out.</p> <p>6 Q. Over on Pages 20 and 21 of</p> <p>7 your report you refer to CRP and other</p> <p>8 inflammatory markers, cytokines,</p> <p>9 inflammatory mediators. Do you see the</p> <p>10 section I'm referring to?</p> <p>11 A. I -- roles of the immune</p> <p>12 system, and then Section E, ovarian</p> <p>13 cancer inflammation?</p> <p>14 Q. Correct.</p> <p>15 A. Which section are you</p> <p>16 referring to?</p> <p>17 Q. Well, the section ovarian</p> <p>18 cancer inflammation at the bottom of</p> <p>19 Page 20, carrying over to the top of</p> <p>20 Page 21.</p> <p>21 A. I see that.</p> <p>22 Q. And there you talk about a</p> <p>23 number of inflammatory markers, correct?</p> <p>24 A. Correct.</p>	<p style="text-align: right;">Page 361</p> <p>1 associated with ovarian cancer.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Well, can you cite for me</p> <p>4 any study that has clinically correlated</p> <p>5 those findings to ovarian cancer risk?</p> <p>6 MS. O'DELL: Objection.</p> <p>7 Asked and answered.</p> <p>8 THE WITNESS: First of all,</p> <p>9 I'm not -- and again, not an</p> <p>10 OB/GYN.</p> <p>11 I can tell you that those</p> <p>12 risk factors, which are</p> <p>13 inflammatory markers, are used as</p> <p>14 an indicator of inflammation as a</p> <p>15 biological plausible mechanism.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Well, do you cite in your</p> <p>18 paper any studies that have --</p> <p>19 A. I'm sorry, do you mean the</p> <p>20 report?</p> <p>21 Q. In your report. Do you cite</p> <p>22 in your report any studies that have</p> <p>23 found that women with these markers have</p> <p>24 a higher -- higher or an increased risk</p>

<p style="text-align: right;">Page 362</p> <p>1 of ovarian cancer?</p> <p>2 A. Well, what I -- no. But</p> <p>3 what I have found is that in women who</p> <p>4 have ovarian cancer, when they measure</p> <p>5 concurrently or subsequently, that the</p> <p>6 levels of certain inflammatory markers</p> <p>7 are elevated.</p> <p>8 Q. My question was specific to</p> <p>9 women prior to being diagnosed with</p> <p>10 ovarian cancer, has any study shown that</p> <p>11 women with higher levels of these</p> <p>12 inflammatory markers have an increased</p> <p>13 risk of ovarian cancer?</p> <p>14 MS. O'DELL: Objection to</p> <p>15 form.</p> <p>16 THE WITNESS: Not in that</p> <p>17 particular context. But again I'm</p> <p>18 not an OB/GYN.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Has any study shown that</p> <p>21 these inflammatory factors are elevated</p> <p>22 in women using talc on the perineum?</p> <p>23 MS. O'DELL: Objection to</p> <p>24 the form.</p>	<p style="text-align: right;">Page 364</p> <p>1 are a normal product of cell activity,</p> <p>2 correct?</p> <p>3 A. That is correct --</p> <p>4 Q. For example, for many --</p> <p>5 A. -- for many cells.</p> <p>6 Q. -- reactive oxygen species</p> <p>7 increase if we exercise, correct?</p> <p>8 A. As well as antioxidants</p> <p>9 increase, yes.</p> <p>10 Q. The same is true for</p> <p>11 reactive nitrogen species, correct?</p> <p>12 A. Yes.</p> <p>13 Q. These --</p> <p>14 A. It's a matter of degree.</p> <p>15 Q. Reactive oxygen species and</p> <p>16 reactive nitrogen species increase if</p> <p>17 we're under stress, correct?</p> <p>18 A. They have been shown to do</p> <p>19 that, yes.</p> <p>20 Q. And the body has defense</p> <p>21 mechanisms to handle this increase in</p> <p>22 reactive oxygen species and reactive</p> <p>23 nitrogen species, correct?</p> <p>24 MS. O'DELL: Objection to</p>
<p style="text-align: right;">Page 363</p> <p>1 THE WITNESS: It's not a</p> <p>2 common thing to measure</p> <p>3 inflammatory mediators as a result</p> <p>4 of the common use of talcum powder</p> <p>5 products. So there is no</p> <p>6 indication of that because there</p> <p>7 are no studies of that.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. If you look over on Page 24</p> <p>10 of your report under the section Role of</p> <p>11 Oxidants in Ovarian Cancer. Do you see</p> <p>12 that section?</p> <p>13 A. Section C on Page 24?</p> <p>14 Q. Correct.</p> <p>15 A. Yes.</p> <p>16 Q. All the processes that you</p> <p>17 describe in this section occur in</p> <p>18 everyone everyday, correct?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 THE WITNESS: To a degree,</p> <p>22 yes.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. The reactive oxygen species</p>	<p style="text-align: right;">Page 365</p> <p>1 form.</p> <p>2 THE WITNESS: The body has</p> <p>3 antioxidant mechanisms, including</p> <p>4 superoxide dismutase, catalase, et</p> <p>5 cetera, that are -- that elevate</p> <p>6 in response to reactive oxygen</p> <p>7 species. But they can be</p> <p>8 overwhelmed by the amount of ROS</p> <p>9 release.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. But it would be improper to</p> <p>12 say that simply by the generation of</p> <p>13 reactive oxygen species or reactive</p> <p>14 nitrogen species, DNA mutations and tumor</p> <p>15 development will occur, correct?</p> <p>16 MS. O'DELL: Object to form.</p> <p>17 THE WITNESS: One couldn't</p> <p>18 say that just by the -- as you</p> <p>19 point out, as the normal -- under</p> <p>20 normal circumstances, endogenously</p> <p>21 within the body, and not in</p> <p>22 response to a particular agent</p> <p>23 does produce these. So one cannot</p> <p>24 say, to answer your question, that</p>



<p style="text-align: right;">Page 366</p> <p>1 it -- just the presence of 2 reactive oxygen species will lead 3 to cancer. 4 BY MR. HEGARTY: 5 Q. What data shows that the 6 body's response system to reactive oxygen 7 species and reactive nitrogen species is 8 unable to handle those species that might 9 be generated by talc exposure? 10 A. Numerous cell studies and 11 numerous animal studies. And you would 12 look at that by the level of antioxidants 13 that are also present. And if a 14 substance such as talcum powder product 15 reduces antioxidants, then the cell or 16 the tissue is going to be overwhelmed by 17 that product. 18 Q. Has that process ever been 19 shown in vivo? 20 A. In a -- I'm not sure if this 21 answers your question. I'll do my best 22 to answer it. And your question was has 23 that process, meaning the process of 24 antioxidant change -- is that your</p>	<p style="text-align: right;">Page 368</p> <p>1 of the literature comes from in vivo 2 animal studies as well as in vitro cell 3 studies. But my role is to -- is to look 4 at biological plausibility. And so 5 studies that reveal or indicate that 6 response in an animal model and in cell 7 culture indicates to me that there's no 8 likely reason why it could not happen in 9 women. 10 Q. Okay. At the top of Page 25 11 of your report, you say that even a 12 single dose of a carcinogen can produce 13 effects that are adverse to cells and 14 tissue at the site of exposure. 15 Do you see where I'm 16 reading? 17 A. Yes. 18 Q. When you say dose, do you 19 mean exposure at a dose or volume of 20 exposure to a substance that studies have 21 proven are adverse to cells and tissues? 22 MS. O'DELL: Object to the 23 form. 24 THE WITNESS: That's a</p>
<p style="text-align: right;">Page 367</p> <p>1 question? 2 Q. No. The process where the 3 cell or the tissue is going to be 4 overwhelmed, has that process ever been 5 shown in vivo in women? 6 A. In women? 7 Q. Yes. 8 MS. O'DELL: Object to the 9 form. You can answer. 10 THE WITNESS: Certainly in 11 animals, but not to my knowledge 12 in women. 13 I'm sorry. I'm still 14 thinking. 15 Whenever the antioxidant 16 levels are decreased, that is an 17 indicator of being overwhelmed by 18 the reactive oxygen species or the 19 oxidation stress. 20 BY MR. HEGARTY: 21 Q. And what studies have shown 22 the antioxidant levels are decreased in 23 women using talc? 24 A. In women using talc -- most</p>	<p style="text-align: right;">Page 369</p> <p>1 multiple question. But when I 2 refer to even a single dose, I 3 mean even a single exposure. 4 BY MR. HEGARTY: 5 Q. Are you saying there a 6 single molecule of the substance? 7 A. What I meant in this report 8 is even a single exposure. The 9 concentration of which could be unknown. 10 A single exposure to a certain 11 concentration, whatever that 12 concentration is, can produce effects. 13 I'm not saying can produce cancer. What 14 I'm saying is can start the process of 15 either inflammation or oxidative stress. 16 Q. And to what tissue does that 17 single dose need to reach to have the 18 adverse effects that you describe there? 19 MS. O'DELL: Object to the 20 form. 21 THE WITNESS: Whatever that 22 particular -- it depends upon the 23 carcinogen or the inflammagogue 24 that one is looking at in terms of</p>



<p style="text-align: right;">Page 370</p> <p>1 a single exposure. And it depends 2 on the susceptibility of the 3 tissue. So to answer your 4 question, doses or concentration 5 to the target tissue is unknown or 6 open. 7 BY MR. HEGARTY: 8 Q. You're not saying that a 9 single application of talc to the 10 perineum can produce effects that are 11 adverse to cells and tissue in the 12 ovaries, correct? 13 MS. O'DELL: Object to the 14 form. 15 THE WITNESS: I'm not saying 16 that it can't. I think I 17 testified earlier that a single -- 18 depending upon what that product 19 is -- in this case we're talking 20 about talcum powder product -- 21 that one exposure, one 22 application, one perineal direct 23 exposure could in fact trigger the 24 cells to start a process leaning</p>	<p style="text-align: right;">Page 372</p> <p>1 A. In women? 2 Q. Yes. 3 A. I can -- I cannot off the 4 top of my head or looking at my report 5 tell you that. Again, I just want to 6 repeat that my charge was to look at 7 biological plausibility and I -- I see 8 those effects or processes that you're 9 indicating in cells and animal models, 10 but I do not have that information with 11 humans. 12 Q. Are you aware of any study 13 correlating the exposures used in those 14 cell and animal models to the exposures 15 that women would experience with perineal 16 application of talc? 17 MS. O'DELL: Object to the 18 form. 19 THE WITNESS: Well, in my 20 mind, and in reality, women use 21 different amounts, whether it's 22 different handfuls. So I can't 23 really give you a concentration. 24 But there are studies, the in</p>
<p style="text-align: right;">Page 371</p> <p>1 towards inflammation. 2 BY MR. HEGARTY: 3 Q. And where the talc -- where 4 does the talc need to go in the body to 5 trigger that mechanism? 6 A. Well, once it gets -- once 7 it's applied to the perineal region, it's 8 my belief that it then migrates up to 9 the -- to the vaginal area. And in the 10 vaginal area, it could also start 11 mechanisms, gene expression changes in 12 the vaginal tissues that could lead to 13 inflammation, or it could get to the 14 point of the cervix or to the fallopian 15 tubes. It causes changes in cells, 16 whether it's gene expression or an 17 inflammation, at any one of those 18 upward -- upward reproductive tract organ 19 systems or tissues. They're all made up 20 of cells that are susceptible to oxidant 21 stress. 22 Q. Can you cite to us any study 23 that has shown that process in women 24 using talc to the perineum?</p>	<p style="text-align: right;">Page 373</p> <p>1 vitro studies, that did use more. 2 However, when you're looking 3 at toxicology and you're looking 4 to define a mechanism or a 5 potential mechanism, if you use 6 even a higher dose, you're 7 still -- you still can elicit the 8 same mechanism. 9 So perineal application -- 10 to answer your question, perineal 11 application can put a lot or a 12 little. But it also depends on 13 the frequency and the duration of 14 the use. 15 BY MR. HEGARTY: 16 Q. Doctor, my question, though, 17 was, has any study correlated the 18 exposures in the animal or cell studies 19 to which you are referring to, to show 20 that those same exposures are occurring 21 in women applying talc to the perineum? 22 A. No. 23 Q. For purposes of your 24 opinions on biological plausibility, do</p>

<p style="text-align: right;">Page 374</p> <p>1 you rely on the studies that you cite in 2 your report done by Dr. Saed? 3 A. I relied on the information 4 from Dr. Saed. It went into making up my 5 opinion, yes. 6 Q. If those studies were not 7 available to you, would your opinions 8 still be the same? 9 A. As I said, one of the -- one 10 of the manuscripts came after my report. 11 And it was -- I looked at an abstract, so 12 I had information. And other -- others 13 of Dr. Saed's I reviewed. But I would 14 have come to the same conclusion. That 15 was just -- that was supplemental and 16 complementary and compelling. 17 Q. Have you ever cited an 18 abstract in any published article of 19 yours? 20 A. Yes, I have. 21 Q. Are you an expert in the 22 kinds of testing that Dr. Saed has 23 reported in the materials you reviewed? 24 A. Yes, I am.</p>	<p style="text-align: right;">Page 376</p> <p>1 just? 2 BY MR. HEGARTY: 3 Q. Ovarian epithelial -- thank 4 you. 5 Have you ever done studies 6 using any type of ovarian epithelial cell 7 lines? 8 A. I have not. 9 Q. Have you ever done any study 10 using ovarian cancer cell lines? 11 A. I have not. Not personally. 12 Q. What data shows that the 13 doses that Dr. Saed used in his studies 14 are comparable to those to which 15 epithelial ovarian cells would be exposed 16 to via perineal application of talc? 17 MS. O'DELL: Objection to 18 form. 19 THE WITNESS: There was no 20 comparison in his study directly. 21 But if I may, I just want to say, 22 when you're looking at biological 23 plausibility, which was the 24 question that I was asked,</p>
<p style="text-align: right;">Page 375</p> <p>1 Q. Do you understand that 2 Dr. Saed is an expert for the plaintiffs 3 in this litigation? 4 A. I do understand that from 5 looking at his publication. 6 Q. Did you do anything yourself 7 to verify the reliability of the testing 8 that he performed whose results you have 9 read in his publications? 10 A. I focused my review and 11 reading of the study design, which is -- 12 and the experimental approach, which are 13 key factors for evaluating any study. 14 And I agree with the experimental 15 approach and the study design that he 16 used. 17 He used proper controls. He 18 used a dose-response. He used the proper 19 techniques in analyzing for cell 20 survivability as well as for oxidative 21 stress and gene expression changes. 22 Q. Have you ever done studies 23 using epithelial cell lines? 24 MS. O'DELL: Ovarian or</p>	<p style="text-align: right;">Page 377</p> <p>1 oftentimes higher doses in vitro 2 studies are used to provide a 3 mechanism or a plausibility or 4 feasibility that that can -- that 5 that product, in this case, talcum 6 powder product, can induce 7 inflammation, inflammatory 8 responses and changes in 9 antioxidant levels. 10 So it is not uncommon to use 11 higher doses in in vitro studies 12 than what might be seen in a human 13 for biological plausibility 14 studies. 15 BY MR. HEGARTY: 16 Q. Can you cite any study that 17 has shown the results reported in 18 Dr. Saed's studies in vivo in women using 19 talc? 20 MS. O'DELL: Objection to 21 form. 22 THE WITNESS: May I get 23 Dr. Saed's paper? 24 BY MR. HEGARTY:</p>

<p style="text-align: right;">Page 378</p> <p>1 Q. Well, I'm actually not 2 asking about Dr. Saed's paper. 3 A. Okay. 4 Q. But my question is -- you've 5 read Dr. Saed's papers, correct? 6 A. Yes, I have. 7 Q. Can you cite for me any 8 study that has shown the results he 9 reports in his studies in women using 10 talc? 11 MS. O'DELL: Object to form. 12 THE WITNESS: His studies 13 were in vitro studies. 14 BY MR. HEGARTY: 15 Q. Are there any such studies 16 looking at the effects in vivo of talc? 17 MS. O'DELL: Objection. 18 THE WITNESS: In vivo in 19 humans or in vivo in animals? 20 BY MR. HEGARTY: 21 Q. In humans. 22 MS. O'DELL: Object to the 23 form. 24 THE WITNESS: When you refer</p>	<p style="text-align: right;">Page 380</p> <p>1 polymorphisms? 2 A. I need to look at my CV 3 again, as being co-investigator. I've 4 worked with other people. I have not 5 performed studies looking at single 6 nucleotide polymorphisms. But I have 7 worked with people who have -- have done 8 them. And if I look at my curriculum 9 vitae, I can tell you if I've been on any 10 publications. 11 Q. Okay. Because of time, just 12 sitting here today, recognizing for the 13 record you haven't looked at your CV, do 14 any such studies come to mind? 15 A. I don't -- I have not done 16 those studies in my own laboratory. 17 Although I'm -- I'm just saying that I 18 may have been on a publication where 19 colleagues of mine have used that -- that 20 method, those methods. 21 Q. Do you have an opinion about 22 talc in single nucleotide polymorphisms 23 or SNPs? 24 MS. O'DELL: Objection.</p>
<p style="text-align: right;">Page 379</p> <p>1 to such studies, can you tell me 2 which studies -- which types of 3 studies again are you referring 4 to? 5 BY MR. HEGARTY: 6 Q. The cell studies that you 7 reference by Dr. Saed on Page 25 of your 8 report. 9 A. And the question is are 10 there any? 11 Q. Studies in humans showing 12 such effects following application of 13 talc to the perineum. 14 MS. O'DELL: Objection to 15 form. 16 THE WITNESS: Not to my 17 knowledge. 18 Excuse me. You said that 19 was on Page 25 that you were 20 referring to? 21 BY MR. HEGARTY: 22 Q. Correct. 23 Have you ever published a 24 paper discussing single nucleotide</p>	<p style="text-align: right;">Page 381</p> <p>1 THE WITNESS: I think 2 there -- there is literature 3 showing, including in Dr. Saed's 4 papers, that there are single -- 5 and in -- in a paper that looked 6 at women and looked at antioxidant 7 enzymes and they showed there was 8 single nucleotide polymorphism 9 changes in those women. 10 Looking at, I think it was 11 glutathione S-transferase M 1. 12 So what is my -- so if your 13 question is what is my opinion on 14 single nucleotide polymorphisms in 15 ovarian cancer? 16 BY MR. HEGARTY: 17 Q. Well, let me ask a different 18 question. Is your biologic mechanism -- 19 I'm sorry. Is your biologic plausibility 20 opinion between talc and ovarian cancer 21 the process or action that Dr. Saed 22 describes in his studies? 23 A. I believe that it could be 24 adding to the -- the plausibility of the</p>

<p style="text-align: right;">Page 382</p> <p>1 relationship or of the causation between 2 ovarian cancer and talcum powder 3 products. 4 Q. Well, is it your opinion 5 that the mechanism by which talc can be 6 biologically -- be a biological plausible 7 cause of ovarian cancer, that's cited by 8 Dr. Saed in his cell studies? 9 MS. O'DELL: Objection to 10 form. 11 THE WITNESS: I believe 12 that -- in my opinion and what I'm 13 stating here in the report, is 14 that inflammation is the 15 primary -- one of the primary 16 biological mechanisms. 17 Whether it appears from the 18 literature that single nucleotide 19 polymorphisms may, in fact, play a 20 role. 21 BY MR. HEGARTY: 22 Q. Okay. But is -- is that -- 23 is it your opinion that -- not that they 24 play -- just that they play a role, but</p>	<p style="text-align: right;">Page 384</p> <p>1 topic. I'll introduce the topic each 2 time that I ask you a question. 3 Going back to the Canadian 4 health assessment that you provided to us 5 at the beginning of the day. 6 A. Yes. 7 (Brief interruption.) 8 BY MR. HEGARTY: 9 Q. Doctor, we talked earlier 10 about Canada's health assessment with 11 regard to talc. Are you familiar with 12 the process by which the Canadian 13 authorities do that health assessment? 14 A. I am -- only from what is in 15 the document. 16 Q. Have you ever been a part of 17 that, of a Canadian health assessment 18 like the one shown with talc? 19 A. I've worked with Health 20 Canada. 21 Q. Okay. Have you ever worked 22 with Health Canada on doing a health 23 assessment like that reflected in the 24 document we looked at earlier today?</p>
<p style="text-align: right;">Page 383</p> <p>1 that is the mechanism for biologic 2 plausibility between talc and ovarian 3 cancer? 4 A. I -- I do not believe it 5 is -- it is not my opinion that -- it is 6 my opinion that single nucleotide 7 polymorphisms, along with inflammation 8 and -- and perhaps other mechanisms may 9 be involved that talc is associated with. 10 I focused my -- my opinion 11 on the assessment of inflammation and its 12 role. 13 MR. HEGARTY: Off the record 14 for a minute. 15 THE VIDEOGRAPHER: The time 16 is 4:48 p.m. We are off the 17 record. 18 (Short break.) 19 THE VIDEOGRAPHER: We are 20 back on the record. The time is 21 5:08 p.m. 22 BY MR. HEGARTY: 23 Q. Dr. Zelikoff, I'm going to 24 jump around a little bit from topic to</p>	<p style="text-align: right;">Page 385</p> <p>1 A. No, I have not. 2 Q. Do you know what kind of 3 standards that they apply in determining 4 whether to call -- whether to say whether 5 there's a potential for harm with a 6 substance? 7 A. Just what is in the 8 document. And then I use my own 9 professional judgment, whether I agree 10 with that or not. 11 Q. Did plaintiff's counsel 12 provide you with some scientific and 13 medical literature with regard to talc or 14 ovarian cancer? 15 A. So the question is whether I 16 was provided with some scientific and 17 medical literature with regard -- yes, 18 many of the articles in the binders were 19 provided to me by them. 20 Q. Are you able to identify 21 which of those articles came from 22 plaintiffs' counsel versus which you 23 found on your own? 24 A. I may be able to do that</p>

<p style="text-align: right;">Page 386</p> <p>1 with some, yes. But this is over a 2 period of, as I said, 2017 to now. 3 Q. With regard to your 4 invoices -- do you have your invoices 5 there? 6 A. I do not. 7 Q. They've been marked as an 8 exhibit. 9 A. Oh. 10 Q. Can someone help her find 11 those invoices? 12 MS. O'DELL: Did you take 13 them back? I don't know that -- 14 there was only one copy. 15 MR. HEGARTY: I don't think 16 I did. I think it was Exhibit 1. 17 MS. O'DELL: The reason I 18 say that is I did not see it 19 during the lunch break when I 20 looked at -- 21 THE WITNESS: I do have the 22 invoices in my binder here. 23 BY MR. HEGARTY: 24 Q. Okay. If you can turn to</p>	<p style="text-align: right;">Page 388</p> <p>1 Q. What are the differences 2 between your current report dated 3 November 16, 2018, and the final report 4 that you provided as shown here back in 5 February of 2018? 6 A. It was -- I own that. It 7 should have said draft report. And the 8 difference is that that's more literature 9 and more time had gone by for the 10 emergence and review of more literature. 11 Q. You go from a reference on 12 February 4, 2018, to the next reference 13 on September 20th -- I'm sorry. Did I 14 say -- let me back up. 15 You go from a reference on 16 February 4, 2018, to the next cite for 17 time on September 20, 2018. Did you 18 review any additional literature between 19 February 4th and September 20, 2018? 20 A. Yes, I'm sure I did. And I 21 also reviewed the production documents 22 within that time. More of the production 23 documents. 24 Q. Your report doesn't show any</p>
<p style="text-align: right;">Page 387</p> <p>1 your binder, please. 2 A. If I recall. 3 Q. If we can find that exhibit, 4 that would be helpful? 5 MS. O'DELL: I'm not sure 6 there are any invoices in her 7 binder. 8 Is it in the stack that's 9 right there? 10 MR. HEGARTY: No, I don't 11 think so. 12 BY MR. HEGARTY: 13 Q. Yeah invoices. I found it. 14 Your invoices, Doctor, 15 reflect that you prepared a final report 16 delivered on February 4, 2018. 17 Do you see that? 18 A. I do see that. 19 Q. That was almost a year ago, 20 correct? 21 MS. O'DELL: Objection to 22 form. 23 THE WITNESS: Yes. 24 BY MR. HEGARTY:</p>	<p style="text-align: right;">Page 389</p> <p>1 time invoiced between February 4, 2018, 2 and September 20, 2018. Did you spend 3 time reviewing literature or otherwise 4 working on your report that's not 5 contained in your invoices? 6 A. It -- I may have. I did not 7 always invoice for something that I spent 8 maybe an hour on. 9 Q. Are you able to cite for me 10 the sections in your report that you 11 added or changed between the report that 12 you prepared on February 4, 2018, and the 13 November 16, 2018, report? 14 A. Not without seeing both 15 reports side by side. 16 Q. Do you still have a copy of 17 the February 4, 2018, report? 18 A. Not with me. 19 Q. Does it exist? 20 A. It likely does on my 21 computer, yes. 22 Q. You mentioned that you 23 referred to -- that you reviewed Julie 24 Pier's deposition testimony?</p>



<p style="text-align: right;">Page 390</p> <p>1 A. I said three-quarters of the 2 deposition, half to three-quarters. 3 Q. That was provided to you by 4 counsel for plaintiffs, correct? 5 A. Yes, correct. 6 Q. Do you know how they went 7 about selecting the deposition 8 transcripts to provide to you for 9 purposes of your review in this case? 10 A. I do not. 11 Q. Did you ask for any 12 deposition -- did you ask for the 13 depositions of all experts who have 14 testified in this litigation? 15 MS. O'DELL: Objection to 16 form. 17 THE WITNESS: I did not ask 18 for depositions. 19 Let me -- let me retract 20 that, please. If in reading my 21 literature there was something 22 that I thought might be in a 23 deposition of someone, I asked the 24 plaintiff attorneys if they had</p>	<p style="text-align: right;">Page 392</p> <p>1 Canada, like Exhibit Number 9? 2 A. I'm sorry. 3 MS. O'DELL: Objection to 4 form. 5 THE WITNESS: All I can say 6 is that in working with Health 7 Canada on immunology in my early 8 career days, that I may have used 9 an assessment like that. 10 BY MR. HEGARTY: 11 Q. Can you cite for me, sitting 12 here today, anytime that you -- your 13 opinions were informed by a Health Canada 14 safety assessment or screening 15 assessment? 16 MS. O'DELL: Object to the 17 form. Other than what she said? 18 THE WITNESS: Except for 19 what I said, I cannot recall. 20 BY MR. HEGARTY: 21 Q. Did you review for purposes 22 of your opinions in this case the current 23 National Cancer Institutes position -- 24 healthcare -- healthcare -- health</p>
<p style="text-align: right;">Page 391</p> <p>1 anything in that regard that would 2 lend to my opinion. 3 BY MR. HEGARTY: 4 Q. And did you ever ask for any 5 additional depositions beyond those that 6 were provided? 7 A. No, I did not. 8 Q. Going back to the Health 9 Canada assessment. Have you ever cited 10 to a Health Canada assessment in any 11 written publication of yours? 12 A. Without looking at my 13 publications, I cannot. But I can tell 14 you that coming to mind just sitting 15 here, as I said, I worked with Health 16 Canada, and I worked with them on my 17 research in fish immunology, and it is 18 possible that I cited Health Canada -- 19 Health Canada literature in those 20 publications concerning fish. 21 Q. Sitting here today, can you 22 recall at any point in time when you -- 23 when your opinions were informed by a 24 draft screening assessment by Health</p>	<p style="text-align: right;">Page 393</p> <p>1 professional PDQ, or the NCI PDQ? 2 A. I have seen that recently. 3 Q. I'll mark as Exhibit Number 4 23, a copy of the NCI PDQ that mentions 5 talc. 6 (Document marked for 7 identification as Exhibit 8 Zelikoff-23.) 9 BY MR. HEGARTY: 10 Q. Have you seen what I marked 11 as Exhibit 23 before -- or as of the time 12 that you drafted your report? 13 A. No, sir. 14 Q. Plaintiffs' counsel did not 15 provide you a copy of that? 16 A. Not prior to my report, no. 17 Q. How did you happen -- who -- 18 strike that. 19 Did -- from where did you 20 receive a copy of Exhibit 23 after 21 preparing your report? 22 A. From the plaintiff attorney. 23 Q. Did you ask for it? 24 A. In general, I asked for all</p>



<p style="text-align: right;">Page 394</p> <p>1 relevant literature and internal 2 information. But I did not specifically 3 ask for the NCI report. 4 Q. When you asked for all 5 relevant information, internal 6 information, was that prior to preparing 7 your expert report? 8 A. That's pretty much on a 9 chronic level, in other words from the 10 time that I was recruited or asked to 11 participate in this, I always asked, "Is 12 there literature? Is there more 13 literature? Here is the literature that 14 I have found," which were quite a number. 15 "Is there anything else that you can add 16 to this?" So I provided literature, and 17 they provided me with literature. 18 Q. You did not find the NCI's 19 PDQ yourself? 20 A. I did not find it myself. 21 Q. Did the NCI PDQ statements 22 on perineal talc exposure inform your 23 opinions in this case? 24 A. As I said, I only saw it</p>	<p style="text-align: right;">Page 396</p> <p>1 A. I reviewed their opinions. 2 I have many questions about how they 3 reached their opinions and what studies 4 they used. 5 If we can just be on the 6 same page in terms of what their opinion 7 is? 8 Q. I'm looking at the section 9 under perineal talc exposure. And my -- 10 my question is -- strike that. 11 I'm looking at the section 12 on perineal talc exposure which is about 13 four pages from the end. 14 A. I see. 15 Q. And my question is only 16 whether that section informed your 17 opinions in this case. 18 MS. O'DELL: Object to the 19 form. 20 THE WITNESS: I reviewed it. 21 It did not change my opinion. 22 Did -- did it inform my opinion? 23 It did not change my opinion. 24 BY MR. HEGARTY:</p>
<p style="text-align: right;">Page 395</p> <p>1 within the last few days. 2 Q. Understood. But you also 3 reviewed the Saed manuscript, you 4 reviewed the Canadian health assessment. 5 You said both those documents informed 6 your opinions. 7 So my question is, did the 8 NCI PDQ also inform your opinions. 9 MS. O'DELL: Object to the 10 form. 11 THE WITNESS: Well, the -- 12 the documents that you previously 13 mentioned do not inform my opinion 14 prior to my report of 15 November 16th. However, it's 16 information that has added to me 17 to get to this place where I am 18 right now. 19 So my opinion has not 20 changed from my report until 21 sitting here today. 22 BY MR. HEGARTY: 23 Q. Did the NCI PDQ add to your 24 opinions in this case?</p>	<p style="text-align: right;">Page 397</p> <p>1 Q. Do you agree with the NCI 2 PDQ statement on perineal talc exposure? 3 A. If we are talking about 4 their final conclusion? 5 Q. I'm talking -- yes. We can 6 talk about their final conclusion. 7 A. Okay. If I'm recalling 8 this, their final conclusion that -- was 9 that there was no causal relationship 10 between talc -- talcum powder exposure 11 and ovarian cancer. Is that -- 12 Q. Well, the -- the weight of 13 the evidence does not support an 14 association between perineal talc 15 exposure and an increased risk of ovarian 16 cancer. Do you agree with that 17 statement? 18 A. I do not agree with that 19 statement. 20 And I find, in reading this 21 document, that I'm not sure how they 22 reached that conclusion. On several 23 points, if you're interested. 24 One is --</p>

<p style="text-align: right;">Page 398</p> <p>1 Q. No, I'm just asking you 2 whether you agreed with it. 3 A. I do not agree with their 4 final conclusion. 5 Q. Neither FDA nor any 6 scientific regulatory or other group has 7 ever sought out your opinions with regard 8 to the biologic plausibility of talc and 9 ovarian cancer, correct? 10 A. That is correct. 11 Q. You made reference earlier 12 to the Penninkilampi article. Do you 13 recall that? 14 A. I recall mentioning it, yes. 15 Q. I'm going to mark as 16 Exhibit 34 a copy of the Penninkilampi 17 article. That's the article that you 18 were talking about earlier, correct? 19 A. 2018, correct. 20 (Document marked for 21 identification as Exhibit 22 Zelikoff-34.) 23 BY MR. HEGARTY: 24 Q. If you turn over to page --</p>	<p style="text-align: right;">Page 400</p> <p>1 A. Yes, I do. 2 Q. Third line down it says, 3 "The mechanism by which perineal talc use 4 may increase the risk of ovarian cancer 5 is uncertain." 6 Do you agree with that 7 statement? 8 MS. O'DELL: Objection to 9 form. 10 THE WITNESS: I think 11 there's no -- in providing 12 biological plausibility, 13 biological plausibility, in and of 14 itself, says that there is a 15 possible mechanism or action that 16 could provide evidence for the 17 causation. 18 So the mechanism by which 19 perineal talc use may increase the 20 risk of ovarian cancer is 21 uncertain. It does not mean 22 it's -- it means it's uncertain, 23 that there are many viewpoints on 24 it.</p>
<p style="text-align: right;">Page 399</p> <p>1 strike that. 2 This is an article that you 3 rely on for purposes of your opinions in 4 this case, correct? 5 A. This is an article that I 6 reviewed and played into, yes, informed 7 my opinions. 8 Q. Did you find it to be a 9 reliable source of information? 10 MS. O'DELL: Object to the 11 form. 12 THE WITNESS: I found no 13 problems in the study design as I 14 read it. 15 Again, I'm not an 16 epidemiologist. So getting into 17 the nuances of this. I'm a 18 toxicologist and I depend on my 19 epidemiology colleagues to fill in 20 the gaps. 21 BY MR. HEGARTY: 22 Q. Over on Page 45, under the 23 section Discussion. Do you see that 24 section?</p>	<p style="text-align: right;">Page 401</p> <p>1 BY MR. HEGARTY: 2 Q. At the very -- in the very 3 last line of that article -- I'm sorry, 4 the very last line of that paragraph it 5 says, "The potential mechanism by which 6 genital talc is associated with an 7 increased risk of ovarian cancer hence 8 remains unclear." 9 Do you agree with that 10 statement? 11 A. I think there is -- in -- in 12 regards to your previous questions that 13 asked me if it was -- if there was an 14 agreement among the medical population, 15 and I said that I didn't know that there 16 was agreement or was not agreement. I 17 thought that there were not agreement. 18 So I agree with the statement that there 19 is still room for further study. 20 Unclear does not mean 21 unknown or that there are not biological 22 plausible mechanisms that could be 23 entertained. 24 Q. Is inflammation part of a</p>

<p style="text-align: right;">Page 402</p> <p>1 normal mechanism of response to the 2 presence of particles in the lungs? 3 A. Depending upon the particle, 4 inflammation can be a normal part of a 5 response, yes. 6 Q. Can tumors occur in the 7 respiratory system with very high 8 exposure to particles that overwhelm the 9 body's clearance mechanisms and lead to 10 particle overload of lung macrophages? 11 A. Are you referring to the NTP 12 study? 13 Q. I'm not referring to any 14 study in particular. That was just a 15 question in general. 16 A. Okay. Can you repeat the 17 question? 18 Q. Yeah. Can tumors occur in 19 the respiratory system with very high 20 exposure to particles that overwhelm the 21 body's clearance mechanisms and lead to 22 particle overload of lung macrophages? 23 MS. O'DELL: Object to form. 24 THE WITNESS: That is a --</p>	<p style="text-align: right;">Page 404</p> <p>1 statement in the third paragraph at the 2 end that says even incidental -- the 3 third paragraph at the end. 4 A. I was looking for a pen. 5 Excuse me. 6 Okay. Go ahead. 7 Q. Says, "Even incidental 8 contamination by amphibole forms of 9 asbestos is hazard enough to cause 10 asbestos-related illnesses." 11 Do you see where I'm 12 reading? 13 A. I'm sorry, are you in the 14 first paragraph? 15 Q. Third paragraph. 16 A. Third paragraph. 17 Q. At the end. 18 A. At the -- traces of these 19 types of asbestos are -- 20 Q. No, third paragraph. 21 Even -- the last line. "Even incidental 22 contamination by amphibole forms of 23 asbestos is hazard enough to cause 24 cancer-related illnesses."</p>
<p style="text-align: right;">Page 403</p> <p>1 that has been seen as a 2 potential -- as a potential to 3 occur, yes. 4 BY MR. HEGARTY: 5 Q. Are there any publications 6 that indicate such a mechanism of 7 particle overload can occur in the 8 ovaries? 9 MS. O'DELL: Objection to 10 form. 11 THE WITNESS: No studies 12 that I'm aware of that -- that 13 refer to particle overload in the 14 ovaries in this regard, in regard 15 to talcum powder. There's 16 evidence, of course, as I said 17 that there is talcum powder in the 18 ovary. 19 BY MR. HEGARTY: 20 Q. Over on Page 5 of your 21 report, Exhibit 2. 22 A. Page headed by Section 4, 23 Asbestos? 24 Q. Correct. You make a</p>	<p style="text-align: right;">Page 405</p> <p>1 Do you see where I'm 2 reading? 3 A. Says, "Cause 4 asbestos-related illnesses." 5 Q. I'm sorry. "Can cause 6 asbestos-related illnesses." You cite -- 7 A. I see where you are reading. 8 Q. -- the Rohl and Langer 9 paper? 10 A. Yes. 11 Q. I'll mark as Exhibit 35 the 12 Rohl and Langer paper that you've cited. 13 (Document marked for 14 identification as Exhibit 15 Zelikoff-35.) 16 BY MR. HEGARTY: 17 Q. Doctor, nowhere in that 18 paper did the author say that incidental 19 contamination by amphibole forms of 20 asbestos is hazard enough -- hazardous 21 enough to cause asbestos-related 22 illnesses, do they? 23 MS. O'DELL: Objection to 24 form.</p>

<p style="text-align: right;">Page 406</p> <p>1 THE WITNESS: I'm sorry, I'm 2 not certain that this is the same 3 paper. This is Rohl, et al. The 4 paper that I cited is Rohl and 5 Langer. 6 BY MR. HEGARTY: 7 Q. It's dated 1976 -- 8 A. 1976. 9 Q. -- correct? 10 A. That's correct. 11 Q. If you look in the abstract 12 of that paper -- 13 A. Yes. The paper -- 14 Q. -- the paper that I marked 15 as Exhibit 35. 16 A. Rohl, et al, yes. 17 Q. Yes. It says, "It's 18 possible adverse health effects from 19 intermittent use of these products, 20 especially those that contain asbestiform 21 and fragmented anthophyllite, tremolite, 22 chrysotile, quartz, and trace minerals 23 are presently unknown and warrant 24 evaluation."</p>	<p style="text-align: right;">Page 408</p> <p>1 Many investigators, 2 including myself, have papers that come 3 out the same year but with different 4 authors. 5 Q. If you -- you turn over to 6 Page 6 of your report. 7 A. Yes, sir. 8 Q. At the end of the first 9 paragraph, at the top of the page. 10 A. Yes. 11 Q. You say that "the close 12 proximity of asbestos in talc and mineral 13 deposits makes extraction of either 14 material alone difficult, if not 15 impossible." 16 Do you see where I'm 17 reading? 18 A. Yes, I do. 19 Q. Is it your testimony that it 20 is impossible to extract talc from 21 mineral deposits without asbestos? 22 MS. O'DELL: Objection to 23 form. 24 THE WITNESS: I'm not a --</p>
<p style="text-align: right;">Page 407</p> <p>1 Did I read that correctly? 2 A. I'm sorry, you are in the 3 abstract, but I don't know what line you 4 are on. 5 Q. The very last line of the 6 abstract. 7 A. "Possible adverse health 8 effects from intermittent use of these 9 products especially those that contain 10 asbestiform and fragmented anthophyllite, 11 tremolite, chrysotile, quartz, and trace 12 minerals are presently unknown and 13 warrant evaluation." 14 Yes. This is also dated 15 1976. 16 Q. Which is the date that you 17 cite to the Rohl and Langer paper? 18 A. Yes, I -- I understand that, 19 sir. However, because this is a Rohl et 20 al., it is certainly possible that I 21 miscited and it was Rohl et al. But my 22 citation in there is Rohl and Langer. So 23 it may have been an error on my part. 24 However, there's pause.</p>	<p style="text-align: right;">Page 409</p> <p>1 I'm not a geologist. I cannot -- 2 I can only rely on the references 3 that are there. 4 BY MR. HEGARTY: 5 Q. Can you list all the steps 6 used in the processing of pharmaceutical 7 grade talc? 8 A. I can give you an overview. 9 But again, I'm not a commercial talc 10 production person, nor am I a geologist, 11 nor am I in the industry. So I can only 12 give you a superficial glimpse. 13 Q. Can you describe the 14 beneficiation for talc? 15 MS. O'DELL: Objection to 16 form. Asked and answered. 17 THE WITNESS: Not in -- not 18 in detail. I only know in general 19 that there is -- actually, I 20 prefer not to answer that at all 21 because I don't want to be 22 inaccurate. It's not my field. 23 BY MR. HEGARTY: 24 Q. Can you turn over to Page 7</p>

<p style="text-align: right;">Page 410</p> <p>1 of your report.</p> <p>2 In the second paragraph you</p> <p>3 refer to the deposition of Alice Blount.</p> <p>4 Do you see that?</p> <p>5 A. Yes, I do. Second sentence.</p> <p>6 Q. And you contend that the</p> <p>7 sample she tested claimed to include</p> <p>8 asbestos, including asbestos in Johnson's</p> <p>9 Baby Powder. Do you see where you make</p> <p>10 that reference?</p> <p>11 A. Yes, I'm citing her</p> <p>12 deposition.</p> <p>13 Q. Did you read the entirety of</p> <p>14 her deposition?</p> <p>15 A. No, sir.</p> <p>16 Q. What testing method did she</p> <p>17 use?</p> <p>18 A. I'd like to see the</p> <p>19 deposition again.</p> <p>20 Q. Did you see from her</p> <p>21 deposition where she testified that her</p> <p>22 results published in 1991 came from a</p> <p>23 Johnson's Baby Powder bottle purchased in</p> <p>24 1996?</p>	<p style="text-align: right;">Page 412</p> <p>1 Q. You read every word of it?</p> <p>2 A. I reviewed it. And I read</p> <p>3 it to the best of my ability.</p> <p>4 Q. You make reference there to</p> <p>5 Exhibits 47 and 28, 47 from Julie Pier</p> <p>6 deposition and 28 from Dr. Hopkins'</p> <p>7 deposition.</p> <p>8 Do you see that?</p> <p>9 A. Yes, I do.</p> <p>10 Q. Do you know who prepared</p> <p>11 those exhibits?</p> <p>12 A. I do not. I would make an</p> <p>13 assumption that it was attorneys.</p> <p>14 Q. Were you aware that they</p> <p>15 were prepared by counsel for plaintiffs?</p> <p>16 MS. O'DELL: Objection to</p> <p>17 form.</p> <p>18 THE WITNESS: As the</p> <p>19 questions were asked by some of</p> <p>20 the attorneys for the plaintiff, I</p> <p>21 would make that assumption.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Did you do anything yourself</p> <p>24 to verify the accuracy of the information</p>
<p style="text-align: right;">Page 411</p> <p>1 A. You know, I'm waiting for</p> <p>2 the -- see the article, please.</p> <p>3 Q. Let me withdraw the</p> <p>4 question. I don't have time to cover</p> <p>5 that.</p> <p>6 If you turn over to -- if</p> <p>7 you look at Page 7, the second-to-last</p> <p>8 paragraph you make reference there to the</p> <p>9 testimony of Dr. Hopkins and the</p> <p>10 testimony of Julie Pier.</p> <p>11 Do you see that?</p> <p>12 A. I see reference to</p> <p>13 Dr. Hopkins in the third sentence. And</p> <p>14 in the same paragraph, I see on the last</p> <p>15 sentence, deposition of Julie Pier,</p> <p>16 corporate representative of Imerys.</p> <p>17 Q. You've already testified</p> <p>18 that you have not completed reading the</p> <p>19 deposition of Julie Pier, correct?</p> <p>20 A. I have testified to that,</p> <p>21 yes.</p> <p>22 Q. Did you read the entirety of</p> <p>23 the deposition of Dr. Hopkins?</p> <p>24 A. I read the entirety, yes.</p>	<p style="text-align: right;">Page 413</p> <p>1 in any of those exhibits?</p> <p>2 A. I'm not sure what you mean</p> <p>3 did I do anything myself. I read them,</p> <p>4 and I did not do any further literature</p> <p>5 searching, if that's what you mean.</p> <p>6 Q. Did you review the test</p> <p>7 results themselves that are supposedly</p> <p>8 reported in those two exhibits?</p> <p>9 MS. O'DELL: Objection to</p> <p>10 form.</p> <p>11 THE WITNESS: Did I review</p> <p>12 the testing methodology? I did</p> <p>13 not review it in the sense that I</p> <p>14 did further literature searching,</p> <p>15 but I -- I looked at and reviewed</p> <p>16 the testing methods that they --</p> <p>17 that they said they used.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Did you actually pull the</p> <p>20 tests that are referenced in those</p> <p>21 exhibits and look at the test results</p> <p>22 yourself?</p> <p>23 A. I did not.</p> <p>24 Q. Are you aware that in 2009</p>

<p style="text-align: right;">Page 414</p> <p>1 FDA pulled -- did its own testing with 2 regard to asbestos and talc? 3 A. I am aware of that. 4 Q. Did you review the results 5 of those tests? 6 A. I did review the results. 7 It doesn't come to mind right now. I'd 8 like to see a copy of it, if I may. 9 Q. Nowhere in your report do 10 you cite those test results, do you? 11 A. Not that I can recall. 12 I do cite a paper or a 13 comment by Epstein writing to the FDA in 14 here. And the FDA's response in terms of 15 migration. 16 But in answer to your 17 question -- can you repeat your question? 18 Q. Sure. Did you cite -- you 19 agree that you didn't cite anywhere -- 20 strike that. 21 You did not cite anywhere in 22 your report the results of the FDA's 23 testing of talc in 2009, correct? 24 A. It doesn't appear so, no.</p>	<p style="text-align: right;">Page 416</p> <p>1 THE WITNESS: There are many 2 studies that IARC used, not just 3 worker study populations. 4 BY MR. HEGARTY: 5 Q. But their conclusion with 6 regard to designating talc -- sorry, 7 designating asbestos as Category 1 was 8 based on five cohort studies involving 9 heavy industrial exposure, correct? 10 A. The preponderance -- or the 11 weight -- the weight of evidence was 12 contributed among all studies, but it's 13 my -- it's my thought that the worker 14 studies were probably weighted as heavy 15 as any others. 16 Q. You agree -- you agree that 17 nowhere in your report do you analyze 18 what asbestos exposure levels had been 19 shown to induce a biologically plausible 20 effect in tissues, correct? 21 MS. O'DELL: Object to the 22 form. 23 THE WITNESS: Again, what do 24 you mean by analyze?</p>
<p style="text-align: right;">Page 415</p> <p>1 Q. Did you have that 2 information before you finalized your 3 report? 4 A. I'm not certain. Probably 5 yes. 6 Q. Did you review all the 7 epidemiologic literature looking at 8 asbestos exposure and ovarian cancer? 9 A. Well, as I said, I'm not an 10 epidemiologist. So I looked at several 11 of the meta-analyses, including 12 Dr. Taher. 13 Q. Did you read all the 14 meta-analyses that had been published 15 with regard to asbestos and ovarian 16 cancer? 17 A. No, I have not. 18 Q. The medical literature 19 looking at asbestos exposure and ovarian 20 cancer was based on exposure to -- was 21 based on a heavy industrial exposure, 22 correct? 23 MS. O'DELL: Objection to 24 form.</p>	<p style="text-align: right;">Page 417</p> <p>1 BY MR. HEGARTY: 2 Q. Well, nowhere do you cite 3 studies in your report reporting on the 4 effect of asbestos in tissues, correct? 5 A. I certainly do talk about 6 asbestos. If you give me a minute to 7 review. 8 I talk about it on Page 7 9 being listed as a Group 1 carcinogen. 10 Q. My question is nowhere in 11 your report do you analyze the studies 12 that look at the toxicity or discuss the 13 toxicity of asbestos in human tissue, 14 correct? 15 MS. O'DELL: Object to the 16 form. 17 THE WITNESS: I -- I did not 18 look at -- I did not analyze in 19 depth, no, the studies that are 20 associated with the IARC report, 21 if that's what you're asking. 22 BY MR. HEGARTY: 23 Q. What type of chromium -- 24 strike that.</p>



<p style="text-align: right;">Page 418</p> <p>1 Is chromium-6 in Johnson's 2 Baby Powder? 3 A. Chromium is in Johnson's 4 Baby Powder. 5 Q. I'm sorry? 6 A. Chromium is present. 7 Q. Is chromium-6 present in 8 Johnson's Baby Powder? 9 A. There are indications. They 10 just discuss total chromium. 11 Q. Can you testify here today 12 that Johnson's Baby Powder has chromium-6 13 in it? 14 MS. O'DELL: Object to the 15 form. 16 THE WITNESS: Again, not 17 being a geologist and only going 18 by the internal documents, and if 19 I may also look at one of the 20 exhibits that has the data for the 21 metals. I'm sorry. 22 MS. O'DELL: It's Exhibit C 23 that was marked. 24 THE WITNESS: I don't want</p>	<p style="text-align: right;">Page 420</p> <p>1 Q. Of your report. The third 2 paragraph from the bottom where it 3 begins, "Chromium-3." 4 A. Yes. 5 Q. You say, "Chromium-3 has 6 weak cell membrane permeability, allowing 7 it to cross the cell membrane in order to 8 bind to DNA and cause lesions." That's 9 not correct, is it? 10 A. That is not correct. That 11 is an error on my part in the report. 12 Chromium-3 has strong membrane 13 permeability. And when you asked me the 14 question initially whether there was an 15 error in my report, I should have looked 16 at it, and that is an error. Yes. 17 Q. In fact chromium-3 does not 18 cross the cell membrane, correct? It's 19 unable to cross the cell membrane? 20 A. Chromium-6 crosses the cell 21 membrane and then converts into -- is 22 oxidized to chromium-3. And chromium-3 23 is the actual component which causes the 24 instability.</p>
<p style="text-align: right;">Page 419</p> <p>1 to go by my memory alone. I'd 2 like to see that. 3 Thank you very much. 4 In the document prepared as 5 Exhibit C, chromium has not been 6 speciated and it's listed as total 7 chromium. I would make the 8 assumption from my professional 9 opinion that in mining, you do get 10 both chromium-6 and chromium-3 11 when you have -- when you're 12 mining talc. But I'm not a 13 geologist. 14 BY MR. HEGARTY: 15 Q. Does chromium-6 only come 16 through industrial processing? 17 A. No. It can actually be 18 found in the soil as a product of 19 contamination. 20 Q. If you look over -- 21 A. And it can be re-oxidized. 22 Yes. 23 Q. If you look over on Page 9? 24 A. Of?</p>	<p style="text-align: right;">Page 421</p> <p>1 Q. But chromium-3 is unable to 2 cross the cell membrane, correct? 3 A. Completely. To some degree 4 it has -- it can cross to some -- some 5 minimal degree. But it's hexavalent 6 chromium which can cross -- which has 7 great capacity to cross the cell 8 membrane, yes. 9 May I take a minute, please. 10 Let me -- let me restate 11 based upon the third paragraph that 12 starts, "Chromium-3 has weak cell 13 membrane permeability." 14 It has weak to no cell 15 membrane permeability. 16 It is the active oxidized 17 product of hexavalent chromium or 18 chromium-6, that along with chromium-4 19 and chromium-5 which is responsible for 20 genetic instability and oxidative stress. 21 So it's chromium-3. 22 Q. If you turn over to Page 23 13 -- I'm sorry, Page 12 of your report. 24 Section entitled C, Fragrances?</p>

<p style="text-align: right;">Page 422</p> <p>1 A. Yes.</p> <p>2 Q. As of the time you prepared</p> <p>3 your report, your entire opinions with</p> <p>4 regard to fragrances was based on the</p> <p>5 report by Michael Crowley, correct?</p> <p>6 A. That is correct.</p> <p>7 Q. You understand --</p> <p>8 A. And, and what I know about</p> <p>9 some of the components from other --</p> <p>10 other studies.</p> <p>11 Q. Have you had any prior work</p> <p>12 experience with him?</p> <p>13 A. Dr. Michael Crowley?</p> <p>14 Q. Yes.</p> <p>15 A. No.</p> <p>16 Q. Do you know anything about</p> <p>17 his qualifications beyond -- beyond what</p> <p>18 you read in his report?</p> <p>19 A. No. Just in his report and</p> <p>20 the information that he gives about</p> <p>21 himself. And the questions that were</p> <p>22 asked to him and the responses.</p> <p>23 Q. You say that you concur --</p> <p>24 "I concur with his opinion." Does that</p>	<p style="text-align: right;">Page 424</p> <p>1 expert witness report in litigation?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 THE WITNESS: I am trying to</p> <p>5 recall whether or not I have ever</p> <p>6 had that opportunity.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Sitting here right now, can</p> <p>9 you recall when you had such an</p> <p>10 opportunity?</p> <p>11 A. In this particular setting</p> <p>12 of being deposed?</p> <p>13 Q. Or in any -- in any setting</p> <p>14 where you are concurring with the opinion</p> <p>15 of someone who -- who comments on</p> <p>16 toxicity in an expert witness report</p> <p>17 written for litigation?</p> <p>18 MS. O'DELL: Objection to</p> <p>19 form.</p> <p>20 THE WITNESS: I would --</p> <p>21 I -- I would comment on it if I</p> <p>22 agreed.</p> <p>23 And in this case, you know,</p> <p>24 having the knowledge base that I</p>
<p style="text-align: right;">Page 423</p> <p>1 mean that you agreed with everything that</p> <p>2 he says in his report?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 THE WITNESS: I concur with</p> <p>6 his statement which says that</p> <p>7 "some of these chemicals in</p> <p>8 fragrances may contribute to the</p> <p>9 inflammatory response, toxicity</p> <p>10 and potential carcinogenicity of</p> <p>11 Johnson &amp; Johnson talcum powder</p> <p>12 products."</p> <p>13 And that's based on the</p> <p>14 knowledge of some of the chemicals</p> <p>15 as I said that I've reviewed for</p> <p>16 other studies and personal</p> <p>17 studies. And they are indeed</p> <p>18 inflammatory and can cause</p> <p>19 toxicity.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. Prior to reading</p> <p>22 Dr. Crowley's report, had you ever</p> <p>23 concurred with a finding as to toxicity</p> <p>24 of a substance based on the reading of an</p>	<p style="text-align: right;">Page 425</p> <p>1 have, not on -- certainly not on</p> <p>2 all 150 different chemicals, which</p> <p>3 is why I did my own literature</p> <p>4 search, but on the chemicals that</p> <p>5 I do know, I did agree with the</p> <p>6 fact that they -- they do</p> <p>7 contribute to inflammatory</p> <p>8 responses, toxicity, some are</p> <p>9 cytotoxic and produce cell injury</p> <p>10 and potential carcinogenicity.</p> <p>11 So as ethyl benzene as one</p> <p>12 of the ingredients or one of the</p> <p>13 constituents in fragrances, is</p> <p>14 listed as a type -- as a Class 2</p> <p>15 carcinogen. So I did agree with</p> <p>16 it.</p> <p>17 If I had any question, I did</p> <p>18 my own search.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Over on page -- Pages 12 and</p> <p>21 13, again you discuss exposure routes of</p> <p>22 talc either through perineal exposure or</p> <p>23 through inhalation, correct? And that</p> <p>24 carries over to Pages 14 and 15, and 16</p>

<p style="text-align: right;">Page 426</p> <p>1 and 17. 2 A. Okay. 3 Q. So in that section, did you 4 in any way analyze whether the particles 5 that -- whether talc can transport in the 6 same way that the particles do in the 7 studies that you cite? 8 MS. O'DELL: Objection to 9 form. 10 BY MR. HEGARTY: 11 Q. In other words, did you cite 12 any authority showing that talc particles 13 transport in the same way as the 14 particles you reference in these studies? 15 A. Not conclusively. But as I 16 said, if the particles are of similar 17 sizes, which they are in these -- in 18 these animal studies, then I would have 19 no reason to believe that the talc 20 particles did not move in the same 21 manner. 22 Q. Well, do you agree that it 23 is important when talking about transport 24 of particles, that -- strike that. Let</p>	<p style="text-align: right;">Page 428</p> <p>1 that are applied to talc via the perineal 2 route? 3 A. What I did was I looked at 4 the internal documents, found that the -- 5 according to the -- the instrumentation 6 and the graphics that they did, as well 7 as Dr. Longo, and looked at the size 8 range of the particles. As I said, the 9 median and the average is around 10.5 to 10 11.5, but there were particle size range 11 in the talc -- talcum powder products 12 that range all the way from 50 microns or 13 larger all the way down to 0.3 microns or 14 300 nanometers. 15 Q. Well, did you do any 16 correlation to determine whether the -- 17 the size of the particles studied in 18 the -- in the articles you cite in any 19 way correlate or relate to the particle 20 sizes in Johnson's Baby Powder? 21 MS. O'DELL: Object to the 22 form. 23 THE WITNESS: The size of 24 particles that were used in many</p>
<p style="text-align: right;">Page 427</p> <p>1 me ask it a different way. 2 You cite to an authority 3 that makes the following statement, I 4 don't want to ask you -- I want to ask 5 you if you agree with it. 6 A. Okay. 7 Q. In an experiment to 8 evaluate -- 9 A. I'm sorry. What page? 10 Q. It's -- it's not on -- it's 11 not in your report. It's part of my 12 question. 13 A. Okay. 14 Q. Do you agree that in an 15 experiment to evaluate the translocation 16 of solid particles, the characteristics 17 of the particle, i.e., size and material, 18 should be considered carefully? 19 A. I agree that the size should 20 be considered very carefully. 21 Q. And did you do any 22 comparison with the size of particles 23 that are referenced in the literature 24 that you cite, to the size of particles</p>	<p style="text-align: right;">Page 429</p> <p>1 of the animal studies certainly 2 fall within the range that I just 3 gave you. 4 BY MR. HEGARTY: 5 Q. Well, a number of the animal 6 studies used nanoparticles, correct? 7 A. They used .1 micron, but 8 they also used larger particles. 9 Q. Is it your testimony that 10 there are nanoparticles of talc in 11 Johnson's Baby Powder? 12 A. If a particle -- a particle 13 is considered an ultra fine particle if 14 it's .1 micron or less. 15 Q. But my question is as to 16 nanoparticles. Are there nanoparticles 17 in Johnson's Baby Powder? 18 A. Not that your literature 19 showed. But ultra fines are also -- can 20 be called nanoparticles because they go 21 as low as .1. 22 Q. If you look over on Page 14 23 of your report, you cite in the second 24 paragraph a letter from FDA to</p>

<p style="text-align: right;">Page 430</p> <p>1 Dr. Epstein, correct?</p> <p>2 A. That's correct.</p> <p>3 Q. I marked as Exhibit</p> <p>4 Number 33 a copy of that letter.</p> <p>5 (Document marked for</p> <p>6 identification as Exhibit</p> <p>7 Zelikoff-33.)</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. Is that a copy of the letter</p> <p>10 that you are referencing in that</p> <p>11 paragraph?</p> <p>12 A. If you could point me to the</p> <p>13 paragraph, please.</p> <p>14 Q. Well, it's the second --</p> <p>15 it's the second paragraph at the top of</p> <p>16 Page 14.</p> <p>17 A. Stating "further evidence</p> <p>18 for migration"?</p> <p>19 Q. Correct.</p> <p>20 A. Okay. Yes. This is the</p> <p>21 letter that I'm referring to.</p> <p>22 Q. In the same paragraph that</p> <p>23 you reference, where you make -- where</p> <p>24 you -- in the same paragraph where you</p>	<p style="text-align: right;">Page 432</p> <p>1 A. I did not.</p> <p>2 Q. Why not?</p> <p>3 A. And in terms of my report,</p> <p>4 and talking about migration, again, the</p> <p>5 ovarian cancer and cogent biological</p> <p>6 mechanism was not appropriate for that,</p> <p>7 where I cited the original statement.</p> <p>8 Q. But you cite elsewhere in</p> <p>9 your report statements and studies you</p> <p>10 contend support your opinion that there</p> <p>11 is a biologically plausible mechanism</p> <p>12 between talc and ovarian cancer, correct?</p> <p>13 A. Yes, I do.</p> <p>14 Q. This statement by FDA</p> <p>15 concerns whether there's a biologically</p> <p>16 plausible mechanism between talc and</p> <p>17 ovarian cancer, correct?</p> <p>18 A. That is -- that is what the</p> <p>19 FDA says, yes.</p> <p>20 Q. Did you cite FDA's statement</p> <p>21 about -- as to its view of whether a</p> <p>22 cogent biological mechanism exists</p> <p>23 anywhere in your report?</p> <p>24 A. I did not cite this</p>
<p style="text-align: right;">Page 431</p> <p>1 pull out the statement that you cite</p> <p>2 here, "FDA states that while there exists</p> <p>3 no direct proof of talc in ovarian</p> <p>4 carcinogenesis" --</p> <p>5 A. Genesis?</p> <p>6 Q. Genesis, carcinogenesis.</p> <p>7 It's getting late for me too.</p> <p>8 Did you cite that finding by</p> <p>9 FDA in this paragraph?</p> <p>10 A. No. What I was trying to</p> <p>11 cite was referring to migration through</p> <p>12 the upper genital tract. So citing the</p> <p>13 information on carcinogenesis would not</p> <p>14 have been appropriate in that paragraph.</p> <p>15 Q. If you turn over to Page 4</p> <p>16 of the FDA's letter. At the very bottom</p> <p>17 FDA states, "A cogent biological</p> <p>18 mechanism by which talc might lead to</p> <p>19 ovarian cancer is lacking."</p> <p>20 Do you see that?</p> <p>21 A. I do see that.</p> <p>22 Q. You do not cite that</p> <p>23 statement anywhere in your report,</p> <p>24 correct?</p>	<p style="text-align: right;">Page 433</p> <p>1 statement.</p> <p>2 Q. You cite one statement by</p> <p>3 FDA that you believe they are correct</p> <p>4 about?</p> <p>5 A. They put a lot of weight</p> <p>6 into that statement and...</p> <p>7 Q. Well, how did you weigh that</p> <p>8 statement versus the other statement that</p> <p>9 I read at the bottom of Page 4?</p> <p>10 A. Sorry, I'd like to find it.</p> <p>11 And repeat the question</p> <p>12 please.</p> <p>13 Q. How did you weigh the</p> <p>14 statements you cite about migration</p> <p>15 versus the other statement that I read at</p> <p>16 the bottom of Page 4 about a cogent</p> <p>17 biologic mechanism?</p> <p>18 A. In terms of the migration,</p> <p>19 this is something that not only has been</p> <p>20 found by the FDA and -- and is being</p> <p>21 reiterated as a result of numerous</p> <p>22 studies, this, Number 4, a cogent</p> <p>23 biological mechanism by which talc led to</p> <p>24 ovarian cancer is lacking is the FDA's</p>

<p style="text-align: right;">Page 434</p> <p>1 opinion in 19 -- in 2014, and I did not 2 know at all how they came to that 3 conclusion. 4 So in terms of migration, 5 that's been ferreted out and it's well 6 known in the literature for migration of 7 particles. But the -- their opinion, the 8 FDA's opinion on this, I could not 9 substantiate in terms of what they were 10 basing that conclusion on. 11 Q. What methodology did you use 12 to determine which of the statements by 13 FDA in this letter you believed are 14 correct and which you believed are not 15 correct? 16 MS. O'DELL: Object to the 17 form. 18 THE WITNESS: Well, if it 19 was a common finding such as that 20 which particles can migrate which 21 has been shown since late 1990s, 22 versus information that is given 23 in this report and is the basis -- 24 and is what the FDA is opining on,</p>	<p style="text-align: right;">Page 436</p> <p>1 scrutiny. I think that for what they 2 did, they did a good study. 3 Q. If you look at Page 3 of the 4 FDA letter. 5 A. Okay. 6 Q. At the bottom, do you see 7 they comment on the very NTP study -- 8 A. Yes. 9 Q. -- that you just mentioned, 10 right? 11 MS. O'DELL: Which page are 12 you on? 13 MR. HEGARTY: Page 3. 14 THE WITNESS: There were a 15 number -- 16 BY MR. HEGARTY: 17 Q. I'm not -- I'm haven't asked 18 a question. 19 A. Oh, I'm sorry. 20 Q. My question was simply, do 21 you see where they comment on that NTP 22 study? 23 A. I see that, yes. 24 Q. Do you cite anywhere in your</p>
<p style="text-align: right;">Page 435</p> <p>1 however, I don't know what the -- 2 what the literature is that they 3 reached in that conclusion. 4 BY MR. HEGARTY: 5 Q. IARC includes a citation in 6 its 2010 monograph saying essentially 7 that the evidence of migration to the 8 ovaries is weak. Do you recall reading 9 that? 10 A. I do not recall reading 11 that. I've reviewed the IARC paper, but 12 I -- I do not recall. And I could look 13 at it and tell you what I thought. 14 Q. You made reference earlier 15 in the deposition to the 1992 NTP study, 16 correct? 17 A. Yes. 18 Q. Do you find that to be a 19 well-done study? 20 A. For what it was, I do find 21 it to be a well-done study. I've worked 22 with the NTP. I've served as an advisory 23 board member. And I think that the work 24 they do are -- is with rigor and</p>	<p style="text-align: right;">Page 437</p> <p>1 report FDA's commentary on the NTP study? 2 A. I can find it in my report. 3 I did comment on some of the other that 4 there's been some controversy by 5 Dr. Warheit and Dr. Goodman. They had 6 some pushback on this. I think I 7 commented on that, but I'd like to find 8 the page where I said that. 9 Q. You agree that you didn't 10 cite to FDA's commentary about the NTP 11 study in its February 14, 2014, letter? 12 A. Not -- not that I recall, 13 no. But as I said, I did comment on 14 other -- their -- the FDA's comments are 15 very similar to those made by other 16 scientists. 17 Q. You say the FDA's comments 18 are very similar to those made by other 19 scientists. You are talking about the 20 comments on Page 3? 21 A. I am. And I'm talking about 22 the comments made by Dr. Jay Goodman and 23 Dr. David Warheit that pushed back on the 24 studies by the NTP and the conclusion.</p>



<p style="text-align: right;">Page 438</p> <p>1 Q. For purposes of your 2 analysis in this case, did you review all 3 the studies on talc miners and millers? 4 A. No, I did not. 5 Q. For purposes -- 6 A. I am not an epidemiologist. 7 Q. For purposes of your 8 analysis in this case, did you look at 9 all the studies looking at talc -- 10 looking at long-term effects of talc 11 pleurodesis? 12 MS. O'DELL: Object to the 13 form. 14 THE WITNESS: It was -- it 15 was not my question to look at -- 16 only to bring the pulmonary 17 aspects in in manners that relate 18 to ovarian effects and 19 inflammation and plausibility. 20 So, no, I did not. I 21 reviewed several studies on 22 pleurodesis, in terms of 23 understanding it, why talcum 24 powder is used, and the effect of</p>	<p style="text-align: right;">Page 440</p> <p>1 So when you're looking at 2 toxicology, it's not just the 3 concentration that you use. It's 4 also the length and duration and 5 frequency of the use and their 6 cumulative effects. 7 BY MR. HEGARTY: 8 Q. Is it your opinion that a 9 single particle of talc is sufficient for 10 biologic plausibility? 11 MS. O'DELL: Objection to 12 form. 13 THE WITNESS: I'm pretty 14 sure I answered that question 15 before. But I will -- again, 16 talcum powder is known to produce 17 inflammation, and inflammation is 18 known to be a biological mechanism 19 for cancer. 20 BY MR. HEGARTY: 21 Q. My question is, is a single 22 particle of talc in vivo sufficient for 23 your biologic plausibility opinion in 24 this case?</p>
<p style="text-align: right;">Page 439</p> <p>1 talcum powder on pleurodesis. 2 BY MR. HEGARTY: 3 Q. What is the volume of talc 4 that gets introduced in vivo with a 5 single application to the perineum? 6 MS. O'DELL: In pleurodesis? 7 THE WITNESS: For 8 pleurodesis? 9 BY MR. HEGARTY: 10 Q. No, just in women in 11 applying -- strike that. 12 MS. O'DELL: I'm sorry. 13 BY MR. HEGARTY: 14 Q. What is the volume of talc 15 that gets introduced in vivo with a 16 single application of talc to the 17 perineum? 18 MS. O'DELL: Objection to 19 form. 20 THE WITNESS: I do not know 21 the concentration. It depends on 22 the person and how they're using 23 it. It also depends on the 24 frequency that they are using it.</p>	<p style="text-align: right;">Page 441</p> <p>1 A. If it produces inflammation, 2 it could be used that way. As a matter 3 of relevancy, I don't think that there's 4 anyone who produces -- who uses a single 5 molecule. But in answer to your 6 question, if that single talc -- talcum 7 powder product produced inflammation, 8 then yes, it could -- it could be related 9 to biological plausibility. 10 Q. Can you cite any published 11 authority that supports that opinion? 12 A. That shows me that one 13 particle could produce inflammation? 14 Q. That could lead to cancer. 15 A. That could lead to cancer. 16 I cannot show you. It's not that I don't 17 know if it's there or not there. I just, 18 to my knowledge, I am not aware. 19 MR. HEGARTY: I'm going to 20 let Mr. Ferguson ask you some 21 questions for a little bit. Then 22 I will come back and finish up. 23 THE WITNESS: Okay. Thank 24 you.</p>



<p style="text-align: right;">Page 442</p> <p>1 THE VIDEOGRAPHER: The time 2 is 6:00 p.m. Off the record. 3 (Short break.) 4 THE VIDEOGRAPHER: The time 5 is 6:25 p.m. Back on the record. 6 - - - 7 EXAMINATION 8 - - - 9 BY MR. FERGUSON: 10 Q. Hello, Dr. Zelikoff. 11 A. Hello. 12 Q. How are you? 13 A. Good, thank you. 14 Q. My name is Ken Ferguson, and 15 I represent Imerys, one of the parties to 16 this litigation. Do you understand that? 17 A. I understand what you said, 18 yes. 19 Q. Okay. And I'm going to have 20 some questions for you, which I'm going 21 to maybe try to go through pretty 22 quickly. But just stop me if I speed up 23 too much. I'm told that I talk slowly. 24 So maybe I won't be speeding up too much.</p>	<p style="text-align: right;">Page 444</p> <p>1 Q. Have you ever been elected 2 to membership in any of the national 3 academies, for example the National 4 Academy of Science? 5 A. I've not been elected as a 6 member, but I have served on the advisory 7 body numerous times. 8 Q. Okay. But you haven't been 9 elected to membership; is that right? 10 A. No, that is correct. 11 Q. Dr. Zelikoff, have you 12 communicated with any regulatory bodies 13 of any country regarding the issue of 14 talc and ovarian cancer that we've been 15 discussing today? 16 A. I have not. 17 Q. Have you communicated with 18 any scientific journals or publications 19 regarding talc and ovarian cancer? 20 A. I have not. 21 Q. So, can you turn to your 22 report, which is Exhibit Number 2. 23 A. I have it. 24 Q. Okay. Can you look at the</p>
<p style="text-align: right;">Page 443</p> <p>1 So first of all, let me just 2 go back briefly to your background and 3 qualifications. 4 A. Okay. 5 Q. Just briefly, do you 6 currently have a laboratory? 7 A. I do have a laboratory. 8 Q. And how many personnel do 9 you have employed in the laboratory? 10 A. Today? 11 Q. Yes, ma'am. 12 A. Today I have no one 13 employed, but three graduate students. 14 Q. And where does the funding 15 come from to support that laboratory? 16 A. It comes from the NIEHS, 17 National Institute of Environmental 18 Health Sciences from a center grant. And 19 that is the main source at this moment. 20 Q. Are you the principal 21 investigator of any extramural or 22 intramural funding at the current time? 23 A. I have -- as of today, I'm 24 not.</p>	<p style="text-align: right;">Page 445</p> <p>1 top of Page 3, please. 2 A. Yes, sir. 3 Q. And in the first full 4 paragraph on that page, it says, "My 5 opinions below are based upon my 6 experience as a toxicologist and research 7 scientist and have been reached through 8 employing the same scientific methodology 9 and rigor that I employ in my academic 10 research and professional duties." 11 Correct? 12 A. Yes, sir, I see that. 13 Q. And is that true? 14 A. That is true. 15 Q. And in your professional 16 duties and academic research, do you 17 customarily rely on peer-reviewed 18 publications in the scientific literature 19 for your research? 20 A. I do -- peer reviews, I rely 21 on. Abstracts come into play. 22 Documents. Whatever is needed, I will 23 use and cite in my publications. 24 Q. Do you customarily rely on</p>

<p style="text-align: right;">Page 446</p> <p>1 non-peer-reviewed research that is paid 2 for by a party that has a direct 3 financial interest in the outcome of the 4 study? 5 MS. O'DELL: Object to the 6 form. 7 THE WITNESS: I go by the 8 science. I don't look at the 9 funding. Many scientists do. But 10 I think if the science is sound, I 11 look at the science -- I go by the 12 science. 13 BY MR. FERGUSON: 14 Q. Look at -- look at Page 8, 15 please. 16 A. Yes, sir. 17 Q. There in the first full 18 paragraph, you talk about recent TEM 19 testing on historic samples. 20 Do you see that sentence? 21 A. Recent TEM testing on 22 historic samples, yes. 23 Q. And you cite Longo and 24 Rigler from 2018, correct?</p>	<p style="text-align: right;">Page 448</p> <p>1 testing from the company? 2 BY MR. FERGUSON: 3 Q. And my question was, can you 4 cite any scientific articles that you've 5 authored in which you cited an 6 unpublished paper authored by an expert 7 witness who is being paid in the 8 litigation on the very topic that you're 9 writing on? 10 A. I have not had that 11 opportunity so the answer is no. 12 Q. So, you've never done that 13 in your academic writings, correct? 14 A. If you mean that -- by that, 15 that I have never cited an unpublished 16 paper authored by an expert witness? 17 Q. Yes, ma'am. 18 A. I have not done -- I have 19 not had the opportunity to do that. My 20 publications are primarily, if not 21 solely, based either on reviews or -- or 22 results that have emerged from my own 23 laboratory or a colleague's laboratory. 24 I've not had that</p>
<p style="text-align: right;">Page 447</p> <p>1 A. Mm-hmm-hmm, yes. 2 Q. Okay. And are you aware 3 that Longo and Rigler are paid expert 4 witnesses who were hired by plaintiffs' 5 counsel to testify in talc litigation, 6 including this matter you're working on? 7 A. I understand -- I understand 8 today that they are plaintiffs' 9 witnesses, experts. 10 Q. Can you cite any scientific 11 articles that you've authored in the past 12 in which you cited an unpublished paper 13 that was authored by expert witnesses 14 hired by a party in litigation on the 15 very topic that you're writing on? 16 MS. O'DELL: Objection to 17 form. 18 THE WITNESS: I relied 19 primarily on Longo. But it is, as 20 I said, or as I will say, it's a 21 Johnson &amp; Johnson product that 22 they are testing, so in my 23 opinion, who better to know what's 24 there than someone who did the</p>	<p style="text-align: right;">Page 449</p> <p>1 opportunity. So the answer is no. 2 Q. If you look at Page 7. 3 A. Of the report? 4 Q. Of -- of your report. Yes 5 please. 6 On Page 7 you say, "In 2004, 7 a television station reported that 8 Johnson's Baby Powder had been analyzed 9 and found anthophyllite asbestos at 10 0.2 percent," correct? 11 A. I see that. That's in the 12 last paragraph. The second sentence: In 13 2004, a television station reported 14 Johnson's Baby Powder had been analyzed 15 and found anthophyllite asbestos at 16 0.2 percent, yes. 17 Q. In your previous academic 18 research, have you ever cited to stories 19 run on local television stations? 20 A. I have. 21 Q. And is that something that 22 you think shows scientific rigor? 23 MS. O'DELL: Objection to 24 form.</p>

<p style="text-align: right;">Page 450</p> <p>1 THE WITNESS: It depends on 2 the scientific paper. And it -- 3 it depends on the source of the 4 media. 5 BY MR. FERGUSON: 6 Q. If we go to Pages 6 -- 7 A. If -- if I may add to that, 8 my recollection is that that television 9 station data was given to Johnson &amp; 10 Johnson and it was not -- I did not cite 11 television station itself, but the -- the 12 document that was turned over to Johnson 13 &amp; Johnson. 14 Q. If you go to Page 6 of 15 your -- 16 A. Page what, I'm sorry? 17 Q. 6. 18 A. 6? 19 Q. So on Pages 6 to 8 you cite 20 documents or other sources that you claim 21 show the presence of asbestos in talc 22 powder, correct? You -- 23 A. Pages 6 to 8? 24 Q. Yeah. Why don't you go to</p>	<p style="text-align: right;">Page 452</p> <p>1 BY MR. FERGUSON: 2 Q. And that's in your report, 3 correct? 4 A. On Page 7 at the top. 5 Q. Then you also cited 6 Dr. Blount's paper that you and 7 Mr. Hegarty talked about, correct? 8 A. I'm sorry, can you give me a 9 location? 10 Q. Sure. It's the second 11 paragraph on Page 7. 12 A. Van Gosen? 13 Q. No, the second full 14 paragraph, cosmetic and pharmaceutical 15 talc products, et cetera -- 16 A. Yes, deposition of Alice 17 Blount. Yes. 18 Q. Correct. 19 A. Sorry to interrupt. 20 Q. And Dr. Blount's paper was 21 some 30 or so years ago, correct? 22 A. 1991. 23 Q. And -- and I won't go 24 through this in detail, but Mr. Hegarty</p>
<p style="text-align: right;">Page 451</p> <p>1 the top of 7. Let me go to it 2 specifically. 3 One of the things you cite 4 to is Paoletti in 1984? 5 A. Yes, sir. 6 Q. Okay. And the Paoletti 7 study was completed -- I don't know if I 8 can do my math very well, but is that 9 36 years ago? 10 A. 36, yes. 11 Q. And you notice they have 12 assessed, according to your own report, 13 contamination in industrial and cosmetic 14 talcs, correct? 15 A. 9 of the 24 pharmaceutical 16 and cosmetic grade talcs contain 17 tremolite fibers. 18 Q. And they are from the 19 Italian market, correct? 20 A. From the Italian market. 21 MS. O'DELL: Objection to 22 form. 23 THE WITNESS: And the 24 European pharmacopeia.</p>	<p style="text-align: right;">Page 453</p> <p>1 discussed with you the fact that U.S. 2 Food and Drug Administration conducted a 3 survey of cosmetic grade raw material 4 talc and some cosmetic products 5 containing talc. And you were generally 6 aware of that, correct? 7 A. The FDA report that he -- he 8 pointed me to, yes. 9 Q. Okay. You were aware but 10 you didn't cite it, correct? 11 A. I was aware but I did not 12 cite it. 13 Q. And that came from 2010 as 14 opposed to 1984 or 1991, correct? 15 MS. O'DELL: Objection -- 16 THE WITNESS: Yes -- 17 MS. O'DELL: Excuse me. 18 Objection to form. 19 If you're going to ask a 20 specific -- about a specific date, 21 I would ask -- or a specific item 22 of that -- in that document I 23 would just ask that you show the 24 witness.</p>

<p style="text-align: right;">Page 454</p> <p>1 BY MR. FERGUSON: 2 Q. Do you -- do you recall when 3 that survey was from? 4 A. The FDA was 2014. I don't 5 recall a specific. 6 Q. Well, okay. Counsel's 7 suggested it. Why don't we go ahead and 8 mark as Exhibit 37. 9 (Document marked for 10 identification as Exhibit 11 Zelikoff-37.) 12 BY MR. FERGUSON: 13 Q. And is this a document that 14 you've reviewed before? 15 A. This is a document that I 16 have reviewed, yes. 17 Q. Okay. If you look at Page 2 18 at the top of the page, in the second 19 paragraph there, it says, "The study ran 20 from September 28, 2009, to September 27, 21 2010," correct? 22 A. So I'm trying to put that 23 sentence into context. So I need to read 24 the above sentences.</p>	<p style="text-align: right;">Page 456</p> <p>1 Luzenac America, correct? 2 A. Correct. On the left side. 3 Q. On the left side. And on 4 the right side there are two columns that 5 say percentage asbestos by PLM and 6 percentage asbestos by TEM, correct? 7 A. I see that. 8 Q. And each of those says NAD, 9 correct? 10 A. They say NAD. 11 Q. And from your review of 12 this, do you know that NAD means no 13 asbestos detected? 14 A. Yes, I do. That means that 15 the measurements that they had and the 16 scientific -- and the sensitivities that 17 they were using at the given time, they 18 did not see any, is my interpretation of 19 that. 20 Q. According to the paper that 21 you said, NAD means no asbestos detected, 22 correct? 23 A. In this study, yes, correct. 24 Q. Let's take a look. You've</p>
<p style="text-align: right;">Page 455</p> <p>1 I assume that the study they 2 are talking about was the contract with 3 the AMA analytical services to conduct 4 the laboratory survey. 5 Is that the study that they 6 are referring to? It's unclear. 7 Q. And in your review of this 8 document, did you read that there was no 9 asbestos detected by the survey by the 10 FDA in either the cosmetic grade raw 11 material talc, or the finished product 12 cosmetic products containing talc, 13 correct? 14 A. I'm trying to find where 15 that was stated. 16 Q. If you look at Page 3? 17 A. Yes, sir. 18 Q. See where it says at the top 19 of the page, "Cosmetic raw material 20 talc"? 21 A. I see that, yes, sir. 22 Q. Correct? 23 Then there is a list of 24 suppliers called Rio Tinto Minerals</p>	<p style="text-align: right;">Page 457</p> <p>1 cited to IARC several times during 2 your -- in your report, correct? 3 A. Yes, I did. 4 Q. And let's look at the IARC 5 monograph 100 C, which was published in 6 2012 that I've marked as Exhibit 36. 7 (Document marked for 8 identification as Exhibit 9 Zelikoff-36.) 10 THE WITNESS: Entitled 11 Arsenic Metals, Fibrous and Dusts? 12 BY MR. FERGUSON: 13 Q. Correct. 14 And if you -- I've provided 15 you a page there, correct? 16 A. You've provided me with 17 three pages. 18 Q. Okay. And was that 19 Page 225? 20 A. 225 starts 1.5 human 21 exposure. 22 Q. Okay. If you look at the 23 top of 225. Do you have that page? 24 A. Yes, sir.</p>

<p style="text-align: right;">Page 458</p> <p>1 Q. In an exposure it says, 2 "Inhalation and ingestion are the primary 3 routes of exposure to asbestos," correct? 4 MS. O'DELL: Objection to 5 form. 6 BY MR. FERGUSON: 7 Q. The very first sentence. 8 A. Mm-hmm-hmm. I cannot attest 9 to ingestion, but certainly inhalation is 10 a primary. 11 Q. But you'd agree that -- that 12 this is what IARC said, correct? 13 A. I agree that this is what's 14 in IARC, yes, 2012. 15 Q. And then there's another 16 section called exposure of the general 17 population, correct? 18 A. Yes, sir. 19 Q. And in the second paragraph 20 under that, do you see that paragraph 21 starts in studies of asbestos 22 concentrations? 23 A. I do. 24 Q. Okay. And -- and let's --</p>	<p style="text-align: right;">Page 460</p> <p>1 A. That's what's here, yes. 2 Q. Okay. So certainly based on 3 what IARC has said, a person could inhale 4 or ingest one or more asbestos fibers 5 from the air that they breathe, correct? 6 MS. O'DELL: Objection to 7 form. 8 THE WITNESS: Based on the 9 measurements, I can't really tell 10 where they took these, where they 11 took the measurements or how they 12 measured them, from this Page 225, 13 but based on what they are saying 14 here, they have measured in 15 outdoor air and rural locations, 16 10 fibers per cubic meter, yes. 17 As I said, if you look down 18 in that paragraph it also 19 indicates that asbestos has been 20 measured in the air in a disaster 21 such as the World Trade Center, in 22 higher concentrations by 23 Dr. Longo. 24 BY MR. FERGUSON:</p>
<p style="text-align: right;">Page 459</p> <p>1 let's read it and see if it -- you and I 2 agree on what it says. 3 "In studies of asbestos 4 concentrations in outdoor air, chrysotile 5 is the predominant fiber detected. Low 6 levels of asbestos have been measured in 7 outdoor air in rural locations; typical 8 concentration, 10 fibers per cubic meter. 9 Typical concentrations are about tenfold 10 higher in urban locations and about 1,000 11 times in close proximity to industrial 12 sources of exposure, e.g., asbestos mine 13 or factory demolition site, or improperly 14 protected asbestos-containing waste 15 site," correct? 16 A. That's what's written here, 17 yes. 18 Q. Okay. And if you go down to 19 the first sentence of the next paragraph, 20 it says, "In indoor air, for example in 21 homes, schools and other buildings, 22 measured concentrations of asbestos are 23 in the range of 30 to 6,000 fibers per 24 cubic meter," correct?</p>	<p style="text-align: right;">Page 461</p> <p>1 Q. And then if you look at 2 Page 229. Are you with me? 3 A. Yes, I am. 4 Q. Under B, dietary exposure. 5 A. Yes. 6 Q. It says in the first 7 sentence under that paragraph heading, 8 "The general population can be exposed to 9 asbestos in drinking water," correct? 10 A. It can happen under certain 11 conditions, yes. It says, "The general 12 population can be exposed to asbestos in 13 drinking water." 14 Q. And then below it says about 15 nine lines down, "In the U.S.A., the 16 concentration of asbestos in most 17 drinking water supplies is less than one 18 fiber per milliliter even in areas with 19 asbestos deposits or with asbestos cement 20 water supply pipes." Correct? 21 A. That's what it says here. 22 Q. And then it says, "However, 23 in some locations the concentration in 24 water may be extremely high containing 10</p>

<p style="text-align: right;">Page 462</p> <p>1 to 300 million fibers per liter or even 2 higher." Correct? 3 MS. O'DELL: Objection to 4 form. 5 THE WITNESS: That's what it 6 says here. 7 BY MR. FERGUSON: 8 Q. So -- 9 A. But it's talking about -- 10 it's talking about specific locations and 11 it's also saying "can." This is not a 12 normal situation. Normal -- this is a 13 contaminated situation. 14 Q. But as IARC said, in the 15 first line we talked about, inhalation 16 and ingestion can be routes of exposure 17 to asbestos for the general population, 18 correct? 19 A. It can be. Can being the 20 keyword. 21 Q. I've got some more questions 22 that I could ask. But I'm going to pass 23 it back to Mr. Hegarty. 24 THE WITNESS: Hello again.</p>	<p style="text-align: right;">Page 464</p> <p>1 (Whereupon, a discussion was 2 held off the record.) 3 THE VIDEOGRAPHER: The time 4 is 6:46 p.m. Back on the record. 5 - - - 6 EXAMINATION 7 - - - 8 BY MR. HEGARTY: 9 Q. Doctor, you have done a 10 number of studies looking at inhalation 11 of particles in animal species primarily, 12 correct? 13 A. In animal species primarily, 14 but also I have done studies in cell 15 culture, yes. 16 Q. In any of the studies where 17 you have looked at inhalation of 18 particles in animals, have you reported 19 finding those particles in the ovaries? 20 A. I did not look in the 21 ovaries. 22 Q. So have you ever evaluated 23 the ovaries in any study that you have 24 done?</p>
<p style="text-align: right;">Page 463</p> <p>1 MR. HEGARTY: Hello again. 2 MS. O'DELL: So are you 3 finished with your questions? 4 MR. FERGUSON: I have other 5 questions that I could ask. But 6 I'm trying to share the limited 7 time that we have. 8 MS. O'DELL: I understand. 9 I'm just trying -- typically we 10 don't go back and forth between 11 the parties. The plaintiffs' side 12 has had time to ask questions. So 13 I guess I'm just trying to figure 14 out what y'all are doing. 15 MR. HEGARTY: Let's go off 16 the record real quick and have a 17 discussion. Because what we 18 planned to do, I took the time 19 that Ken was using to organize my 20 notes and to finish up the 21 remaining time. 22 Go off the record. 23 THE VIDEOGRAPHER: The time 24 is 6:45 p.m. Off the record.</p>	<p style="text-align: right;">Page 465</p> <p>1 A. I have evaluated -- in the 2 cadmium particle studies, we looked for 3 the soluble ions, that's what we 4 measured, using atomic absorption and ICT 5 mass spec. And we did find cadmium -- 6 sorry. Sorry. We did find soluble 7 cadmium ions in the -- in the tissue -- 8 in the ovaries. 9 Q. Of what animal? 10 A. Mice. 11 Q. So there's nothing unique 12 with regard to talc in your opinion with 13 regard to its ability to transport within 14 the body, correct? 15 MS. O'DELL: Object to the 16 form. 17 THE WITNESS: Talc is a 18 fiber and will transport as a 19 fiber. It's also hydrophilic so 20 it will require some time for the 21 other products within the talc 22 molecule to be released. I am not 23 sure if I answered your question. 24 BY MR. HEGARTY:</p>



<p style="text-align: right;">Page 466</p> <p>1 Q. What about platy talc? Will 2 platy talc travel in the body as cadmium 3 would travel? 4 A. Cadmium is a -- has traveled 5 as a soluble ion. So platy talc -- 6 neither platy talc nor asbestos will 7 travel as a soluble ion. They are 8 fibers. 9 Q. Have you done -- 10 A. They are -- I'm sorry, platy 11 talc is a crystal with different forms. 12 But my understanding is that platy talc 13 can fracture and also form fragments and 14 they could travel, given their size. 15 Q. Could they travel as cadmium 16 has traveled in your studies, if that 17 happens? 18 A. No, in -- in my studies we 19 did not measure -- we did not look for 20 the presence of the particle -- of the 21 nanoparticle in the tissues. We measured 22 for the metal in those tissues. 23 So we are of the opinion 24 that it was the soluble ion that was</p>	<p style="text-align: right;">Page 468</p> <p>1 to reach -- it can reach the deep lung, 2 if it's five micrometers or smaller. 3 And -- 4 Q. Go ahead. 5 A. And in that case since it's 6 not disposed of through the mucociliary 7 escalator, then it is in the other parts 8 of the lung and it can reach the 9 capillaries. And once it gets into the 10 bloodstream, it can be transported. 11 Certain particles have predilections for 12 where they go. 13 Q. When you say it can be 14 transported, does that include to the 15 ovaries? 16 A. Are you asking specifically 17 about talc or particles in general? 18 Q. Particles in general that 19 meet the size standards that you just 20 referenced of getting into the deep lung? 21 A. Mm-hmm-hmm. There's no 22 reason not to believe that it couldn't 23 get into the ovaries. 24 Q. Did you examine, for</p>
<p style="text-align: right;">Page 467</p> <p>1 released, and in this case, I know of no 2 studies off the top of my head that 3 measured how much of the other components 4 were released. 5 Q. Can any particle that's 6 inhaled reach the ovary? 7 A. If it -- if it meets certain 8 size constituents. There's no reason why 9 a particle could not reach the ovary or 10 the kidney or the liver or -- under 11 proper circumstances. 12 Q. Is there a certain size 13 limitation? 14 A. Well, something that's 15 inhaled, is that what you're talking 16 about? 17 Q. Yes. 18 A. Something that's inhaled, if 19 it's 10 micrometers or greater, it's 20 going to be caught in the upper airways 21 and probably dismissed through the 22 mucociliary escalator. If it's of a 23 smaller nature, then depending on where 24 the impaction is for the lung, it's going</p>	<p style="text-align: right;">Page 469</p> <p>1 purposes of your biological plausibility 2 opinion, all the studies looking at 3 NSAIDs and use of aspirin in women with 4 ovarian cancer? 5 A. I looked at several studies. 6 I'm sure I -- 7 (Document marked for 8 identification as Exhibit 9 Zelikoff-38.) 10 BY MR. HEGARTY: 11 Q. I'm going to show you what I 12 marked as Exhibit 38, which is a study 13 that you cited by Wu 2009. 14 A. Actually, it's Merritt. 15 Q. I'm sorry. It's Merritt 16 2008, correct? 17 A. Yes. And let me find it in 18 my report. 19 Q. You cite it on Page 26. 20 Above the italicized paragraph -- 21 italicized paragraph at the bottom. 22 A. I see it. "At high 23 concentrations with chronic exposure, 24 reactive oxygen species, known as ROS,</p>

<p style="text-align: right;">Page 470</p> <p>1 can damage cellular macromolecules and 2 contribute to neoplastic transformation 3 and/or tumor growth. Other likely 4 manifestations of talc." That's the 5 paragraph that you're referring to. 6 Q. You do agree that a relevant 7 body of literature is whether NSAIDs or 8 aspirin have an effect on ovarian cancer 9 risk, if you're considering inflammation 10 as a biologically plausibility mechanism. 11 A. NSAIDs being an -- one type 12 of anti-inflammatory, it could reduce 13 oxidative stress, yes, to different 14 degrees. 15 Q. If you look at the abstract 16 on the first page of the Merritt paper. 17 A. Yes. 18 Q. At the very end, they say, 19 "We conclude that on balance chronic 20 inflammation does not play a major role 21 in the development of ovarian cancer." 22 Do you see where I'm 23 reading? 24 A. I'm seeing the last</p>	<p style="text-align: right;">Page 472</p> <p>1 on Page 21 of your report? 2 A. Can you direct me to it? 3 Oh, I see it. Second paragraph. "Wu, et 4 al, 2009, performed a study to determine 5 the role of talc in the development of 6 ovarian cancer considering the history of 7 endometriosis." 8 Q. If you look at the abstract 9 of the Wu paper, about two-thirds of the 10 way down, it reads, "Contrary to the 11 hypothesis." 12 Do you see that start of the 13 sentence? 14 A. I do. 15 Q. "Contrary to the hypothesis 16 that risk of ovarian cancer may be 17 reduced by use of NSAIDs, risk increased 18 with increasing the frequency in years of 19 NSAID use," citing the relative risk, the 20 confidence intervals. "This was 21 consistent across types of incident." 22 Do you see where I'm 23 reading? 24 A. I do see where you're</p>
<p style="text-align: right;">Page 471</p> <p>1 sentence, yes. 2 Q. Do you agree with that 3 statement in general? 4 A. I do not agree with that 5 statement. That's -- my biological 6 plausibility is associated with the 7 oxidative stress and inflammation. Also 8 this paper was written in 2008. 9 Q. Did you cite that finding 10 that I just read anywhere in your report? 11 A. I cite Merritt. 12 Q. Do you cite for the reader 13 of your report the statement that I just 14 read in the abstract? 15 A. Not to my recollection. 16 (Document marked for 17 identification as Exhibit 18 Zelikoff-39.) 19 BY MR. HEGARTY: 20 Q. I'm showing you what I've 21 marked as Exhibit Number 39. That is the 22 Wu paper. 23 A. Mm-hmm-hmm. 24 Q. You cite the Wu paper over</p>	<p style="text-align: right;">Page 473</p> <p>1 reading. 2 Q. That finding is inconsistent 3 with inflammation as a mechanism by which 4 ovarian cancer can occur, correct? 5 MS. O'DELL: Object to the 6 form. 7 THE WITNESS: This -- NSAIDs 8 are known as antioxidants. And 9 yes, that's true, but there are 10 other antioxidants from other 11 papers that demonstrate that it 12 does indeed reduce inflammation. 13 BY MR. HEGARTY: 14 Q. Well, did you cite the 15 finding of the Wu paper with regard to 16 its data on NSAID use and the risk of 17 ovarian cancer? 18 A. I did have a section, to my 19 recollection, on the papers of Wu and 20 Merritt. 21 Q. Well, in the section that I 22 was referring to, in the middle of the 23 paragraph on Page 21, middle paragraph on 24 Page 21, you don't cite that study's</p>

<p style="text-align: right;">Page 474</p> <p>1 findings as to NSAIDs and risk of ovarian 2 cancer, correct? 3 A. I do not cite that 4 particular sentence, no. 5 Q. Over on Page 23, you refer 6 to the Shukla study? 7 A. Yes, sir. 8 Q. That's second to the last 9 paragraph? 10 A. "In a molecular cell study 11 by Shukla"? 12 Q. Yes. The -- strike that. 13 Gene expressions like those 14 measured in the Shukla study occur 15 everyday in everyone, correct? 16 MS. O'DELL: Objection to 17 form. 18 THE WITNESS: There are 19 changes in genes per day. But 20 I'm -- I'm not -- I do not know 21 nor do I have knowledge of whether 22 the gene for ATF3 or ATF1 is 23 changed everyday by no exposure. 24 BY MR. HEGARTY:</p>	<p style="text-align: right;">Page 476</p> <p>1 proinflammatory cytokines and oxidase, 2 yes. 3 Q. Is there any study that 4 sites the clinical significance of ATF as 5 it relates to ovarian cancer risk? 6 MS. O'DELL: Object to the 7 form. 8 THE WITNESS: No study that 9 I'm currently aware of. But there 10 are many studies that link ATF 11 upregulation to inflammation and 12 then inflammation to -- in the 13 process of carcinogenesis, both 14 progression and initiation. 15 BY MR. HEGARTY: 16 Q. If you turn over to the 17 second to the last page of your report, 18 Page 27. 19 In Paragraph 3, you say that 20 exposure to talcs -- 21 A. Excuse me, Number 3? 22 Q. I called it Paragraph 3. 23 You can call it Number 3. 24 A. It's listed as Number 3.</p>
<p style="text-align: right;">Page 475</p> <p>1 Q. But the -- the fact of gene 2 expression is not a -- strike that. 3 The fact that gene 4 expression occurs does not mean that 5 cancer will occur, correct? 6 A. No. My role is to look for 7 biological plausibility, and when you 8 have a transcription factor which is so 9 well immersed into oxidation and reactive 10 oxygen species and inflammation, and I 11 would say that changes or upregulation of 12 the -- of the ATF gene certainly is 13 linked with inflammation. 14 Q. Can you cite for me any 15 studies that have used measurements of 16 level -- of the levels of ATF3 to assess 17 ovarian cancer risk? 18 A. I cannot cite those studies 19 to you, but again, going back to 20 biological plausibility, I can tell you 21 that this gene is extremely important in 22 growth factors and proinflammatory 23 cytokines. So an upregulation is going 24 to lead to the production of</p>	<p style="text-align: right;">Page 477</p> <p>1 Q. 3. You state that "exposure 2 to talcum powder products causes an 3 inflammatory tissue reaction which may 4 result in the following," and then you 5 list -- 6 A. Elevation. 7 Q. -- a number of -- of events 8 that you label as A through F -- I'm 9 sorry, A through G carrying over to the 10 top of the next page. 11 A. I see that, thank you. 12 Q. Can you cite for me any 13 studies showing any of that activity in 14 women using talc on the perineum? 15 MS. O'DELL: Object to the 16 form. 17 THE WITNESS: If I can 18 recall the Health Canada study, I 19 think they looked at -- they also 20 included inflammatory responses 21 that are seen in some of their 22 meta-analysis. 23 BY MR. HEGARTY: 24 Q. Well, the Health Canada</p>

<p style="text-align: right;">Page 478</p> <p>1 study, the Taher study, was a 2 meta-analysis, correct? 3 A. Yes, correct. 4 Q. Can you cite for me any 5 studies reporting that -- reporting these 6 events occurring in women using talc on 7 the perineum? 8 MS. O'DELL: Object to the 9 form. 10 THE WITNESS: If you're 11 asking me if gene alterations or 12 mutations or the level of 13 apoptosis has been measured in any 14 women exposed, no, I do not recall 15 that. 16 BY MR. HEGARTY: 17 Q. Have any of the processes -- 18 A. Excuse me. If I may add. 19 But inflammatory markers have been looked 20 at in women with ovarian cancer and they 21 are elevated. 22 Q. And my question, as you'll 23 recall, is specific to talc users, 24 correct?</p>	<p style="text-align: right;">Page 480</p> <p>1 as exhibit -- Exhibits 40 through 2 48 -- I'm sorry, 47 -- the 3 notebooks that had been produced 4 for purposes of the deposition 5 here today. 6 (Documents marked for 7 identification as Exhibits 8 Zelikoff-40 through 47.) 9 BY MR. HEGARTY: 10 Q. Over on Page 23, you -- 11 A. Of my report? 12 Q. Of your report, with regard 13 to the Shukla study. 14 I'm sorry, over on Page 26. 15 You cite again the Shukla study. Do you 16 see that where -- do you see where you 17 say "nonfibrous talc at low in vitro 18 exposure concentrations caused increased 19 expression of transcription factors 20 associated with the inflammatory process 21 in a time and dose dependent manner"? 22 A. I'm sorry, I'm not clear 23 on -- 24 Q. Middle of the second full</p>
<p style="text-align: right;">Page 479</p> <p>1 MS. O'DELL: Objection to 2 form. 3 THE WITNESS: Talc -- yes, 4 talc products. 5 BY MR. HEGARTY: 6 Q. Can you -- can you cite to 7 me any studies showing elevations of any 8 of these processes in women using talc? 9 MS. O'DELL: Object to the 10 form. 11 THE WITNESS: Well, 12 neoplastic transformation and 13 proliferation is clearly seen 14 in -- obviously if there's a 15 variant answer, you've had 16 neoplastic transformation 17 proliferation. 18 BY MR. HEGARTY: 19 Q. Well, my question is 20 specific to women using talc prediagnosis 21 of ovarian cancer. 22 A. I see. No, sir. 23 MR. HEGARTY: For purposes 24 of the deposition, we want to mark</p>	<p style="text-align: right;">Page 481</p> <p>1 paragraph. 2 A. Not -- after the Mori 3 citation? 4 Q. Yes. 5 A. "Nonfibrous talc at low in 6 vitro exposure concentrations caused 7 increased expression of transcription 8 factors associated with the inflammatory 9 process in a time and dose dependent 10 manner." Yes, I see that. 11 Q. What did you mean by say -- 12 by time and dose manner? 13 A. May I see the paper? 14 (Document marked for 15 identification as Exhibit 16 Zelikoff-48.) 17 BY MR. HEGARTY: 18 Q. Marking as Exhibit 49 -- 48 19 that paper. 20 A. Thank you. 21 MR. TISI: We are at seven 22 hours by the way. 23 MS. O'DELL: We are at seven 24 hours?</p>

<p style="text-align: right;">Page 482</p> <p>1 MR. TISI: Yes, we are.  2 MS. O'DELL: We're at seven  3 hours, Mark.  4 MR. HEGARTY: Okay. Are you  5 going to instruct her not to  6 answer that question?  7 MS. O'DELL: Well, the  8 federal rules limit this  9 deposition to seven hours and --  10 MR. HEGARTY: No, I  11 understand, but I also remember a  12 deposition where I think I let  13 Chris go over about two or  14 three minutes.  15 MR. TISI: Yeah, but you are  16 using a whole new exhibit.  17 MS. O'DELL: You just marked  18 it --  19 MR. HEGARTY: I just want to  20 make sure that was --  21 MR. TISI: Are you going to  22 suggest --  23 MR. HEGARTY: No, I just  24 want to know if that -- if you</p>	<p style="text-align: right;">Page 484</p> <p>1 want to let her answer or not.  2 It's simply up to you. If you say  3 we're done, then I will -- I'm not  4 going to dispute it.  5 MS. O'DELL: We are -- I  6 will let you answer that question.  7 But after that, we're -- we're  8 done.  9 MR. HEGARTY: Okay. Thank  10 you.  11 MS. O'DELL: Do you recall  12 the question, Dr. Zelikoff?  13 THE WITNESS: Yes. The  14 question is -- what -- I'll repeat  15 it from here.  16 What did I mean by a time  17 and dose dependent manner?  18 BY MR. HEGARTY:  19 Q. Yes.  20 A. In the Shukla study?  21 Q. Correct.  22 A. Well, if we look at Figure 2  23 concerning cell viability in the Shukla  24 paper, Page 117.</p>
<p style="text-align: right;">Page 483</p> <p>1 want to end the deposition for me  2 right here?  3 MR. TISI: That was a fact  4 witness, as you know.  5 I leave it to Leigh. If  6 we're going to -- if we're going  7 to have this rule, we need to kind  8 of be consistent with it.  9 MR. HEGARTY: No, I'm not  10 looking to apply another rule.  11 Just tell me whether you'll let  12 her answer the question or if the  13 time -- because the time is up,  14 that question will not be  15 answered.  16 MS. O'DELL: The time -- the  17 time is up. What is your -- what  18 was your question?  19 MR. HEGARTY: My question  20 was, "What do you mean where you  21 say time and dose dependent  22 manner." But I'm not going to  23 insist on any applicable rule.  24 I'll let you decide whether you</p>	<p style="text-align: right;">Page 485</p> <p>1 So we can see, I'm trying to  2 find the exact one that I want to refer  3 to. Figure A, one can see that in terms  4 of the concentration and over time, that  5 the number -- total number of viable  6 cells were altered. And in Figure 2, 15  7 and 75 -- no, scratch Figure 2, sorry.  8 So on Page 118, in looking  9 at number of genes that were  10 significantly changed, we can see looking  11 at the concentration -- and this is for  12 asbestos -- there was a change in effect  13 in asbestos. If one looks at -- I think  14 that's it. That's what I meant.  15 MR. HEGARTY: Okay. Thank  16 you.  17 MS. O'DELL: Off the record.  18 THE VIDEOGRAPHER: The time  19 is 7:07 p.m. Off the record.  20 (Short break.)  21 THE VIDEOGRAPHER: We are  22 back on the record. The time is  23 7:30 p.m.  24 - - -</p>

<p style="text-align: right;">Page 486</p> <p>1 EXAMINATION</p> <p>2 - - -</p> <p>3 BY MS. O'DELL:</p> <p>4 Q. Dr. Zelikoff, I have a few</p> <p>5 follow-up questions for you.</p> <p>6 Prior to your involvement in</p> <p>7 litigation, this litigation, did you hold</p> <p>8 the opinion that inflammation causes</p> <p>9 cancer?</p> <p>10 MR. HEGARTY: Objection to</p> <p>11 form.</p> <p>12 THE WITNESS: Yes. I held</p> <p>13 the opinion for a very long time</p> <p>14 that inflammation causes cancer.</p> <p>15 BY MS. O'DELL:</p> <p>16 Q. And in terms of your</p> <p>17 knowledge and opinion prior to your</p> <p>18 involvement in the litigation, did you --</p> <p>19 did you have an opinion regarding the</p> <p>20 role of oxidative stress in the</p> <p>21 development of cancer?</p> <p>22 A. Yes, I did. My opinion was</p> <p>23 that oxidative stress was closely</p> <p>24 involved with the causation of cancer.</p>	<p style="text-align: right;">Page 488</p> <p>1 A. I relied on his report, yes.</p> <p>2 Q. And did Dr. Crowley conclude</p> <p>3 that the chemicals involved in the</p> <p>4 fragrances for both Johnson &amp; Johnson's</p> <p>5 Baby Powder and Shower to Shower may</p> <p>6 contribute to the inflammatory response,</p> <p>7 toxicity and potential carcinogenicity of</p> <p>8 Johnson &amp; Johnson's talcum powder</p> <p>9 products?</p> <p>10 MR. HEGARTY: Objection to</p> <p>11 form.</p> <p>12 THE WITNESS: Yes. I concur</p> <p>13 with that whole opinion.</p> <p>14 BY MS. O'DELL:</p> <p>15 Q. And in fact, that's the</p> <p>16 specific opinion he included in his</p> <p>17 report that you relied on?</p> <p>18 A. Yes, that's correct.</p> <p>19 MR. HEGARTY: Objection to</p> <p>20 form.</p> <p>21 BY MS. O'DELL:</p> <p>22 Q. And so if another expert was</p> <p>23 also relying on Dr. Crowley's analysis,</p> <p>24 it wouldn't be surprising that the same</p>
<p style="text-align: right;">Page 487</p> <p>1 Q. So to the degree that your</p> <p>2 work in this case addressed new</p> <p>3 considerations, were those considerations</p> <p>4 primarily focused on talc and its ability</p> <p>5 to cause inflammation and oxidative</p> <p>6 stress?</p> <p>7 MR. HEGARTY: Objection to</p> <p>8 form.</p> <p>9 THE WITNESS: That is</p> <p>10 correct.</p> <p>11 BY MS. O'DELL:</p> <p>12 Q. Can you -- if I could ask</p> <p>13 you to take your report. I think it's</p> <p>14 right to your left. I'm going to ask</p> <p>15 you -- if you'll turn to Page 12. Do you</p> <p>16 see that? The subsection involving</p> <p>17 fragrance, fragrance chemicals?</p> <p>18 A. Yeah. C, fragrances.</p> <p>19 Q. And did you rely on</p> <p>20 Dr. Crowley's report and his review of</p> <p>21 the relevant literature and other</p> <p>22 information regarding the chemicals that</p> <p>23 are included in the fragrance for Baby</p> <p>24 Powder and Shower to Shower?</p>	<p style="text-align: right;">Page 489</p> <p>1 wording was used?</p> <p>2 MR. HEGARTY: Objection to</p> <p>3 form.</p> <p>4 THE WITNESS: Absolutely</p> <p>5 not.</p> <p>6 BY MS. O'DELL:</p> <p>7 Q. Let me ask you other</p> <p>8 questions about the general principles in</p> <p>9 your report. I think you testified, you</p> <p>10 were asked a number of questions about</p> <p>11 general principals. And in your</p> <p>12 judgment, is it generally accepted to --</p> <p>13 to use common phrasing for general</p> <p>14 principles in scientific publications?</p> <p>15 A. Yes.</p> <p>16 MR. HEGARTY: Objection to</p> <p>17 form.</p> <p>18 THE WITNESS: I answered</p> <p>19 that question before, and yes.</p> <p>20 Common, well-publicized,</p> <p>21 well-established concepts, yes.</p> <p>22 BY MS. O'DELL:</p> <p>23 Q. You were asked during the</p> <p>24 early part of the day certain questions</p>



<p style="text-align: right;">Page 490</p> <p>1 about whether you were an expert in areas 2 such as talc and inflammation? 3 A. Yes. 4 Q. And I think if you recall 5 the response you answered you were not 6 classified as an expert. What did you 7 mean by that? 8 MR. HEGARTY: Objection to 9 form. 10 THE WITNESS: What I meant 11 was in terms of legal, whether -- 12 one of the questions that arose 13 was, in the past, have I been 14 listed as an expert in other 15 cases. And so I followed that 16 line of thought and thought that 17 we were still talking about 18 litigation and formal declaration 19 as an expert in that area. 20 BY MS. O'DELL: 21 Q. Are you an expert in the 22 toxicological effects of minerals on 23 the -- on humans? 24 MR. HEGARTY: Objection to</p>	<p style="text-align: right;">Page 492</p> <p>1 A. My numerous publications in 2 that area of metal toxicology that I've 3 been doing for many, many, many years. 4 Q. And in addition to your 5 training, experience, do you also make 6 those statements based on your review of 7 the available scientific and medical 8 literature? 9 A. In regards to metals? 10 Q. In all the environmental 11 exposures we've just discussed? 12 A. Yes. I rely on 13 literature -- 14 Q. You were asked questions -- 15 A. -- as well as my own 16 scientific research. 17 Q. Excuse me. I didn't mean to 18 cut you off, Doctor. 19 You were asked questions 20 about whether there were any studies or 21 evidence that you relied on involving 22 Johnson's Baby Powder. 23 Do you recall that? 24 A. I do recall that question,</p>
<p style="text-align: right;">Page 491</p> <p>1 form. 2 THE WITNESS: I'm expert in 3 toxicology of environmental 4 chemicals, including mixtures, 5 including fibers, including 6 particles, including talc. 7 BY MS. O'DELL: 8 Q. And would that -- would that 9 also include -- when you said fibers, 10 would that also include asbestos and 11 fibrous talc? 12 MR. HEGARTY: Objection to 13 form. 14 THE WITNESS: Yes. 15 BY MS. O'DELL: 16 Q. Are you an expert in the 17 toxicological effects of heavy metals on 18 the humans? 19 MR. HEGARTY: Objection to 20 form. 21 THE WITNESS: Yes, I am. 22 BY MS. O'DELL: 23 Q. And what do you base that 24 statement on?</p>	<p style="text-align: right;">Page 493</p> <p>1 yes. 2 Q. And do the -- strike that 3 and start again. 4 Did Dr. Saed in the testing 5 that was done and reported in not only 6 the abstracts but also his manuscript, 7 involve Johnson's Baby Powder? 8 MR. HEGARTY: Objection to 9 form. 10 THE WITNESS: Yes. 11 Dr. Saed's did. Thank you for 12 reminding me. 13 BY MS. O'DELL: 14 Q. Was Dr. Longo and Rigler's 15 testing of historical samples of talcum 16 powder products produced in this 17 litigation, including Johnson's Baby 18 Powder and Shower to Shower? 19 A. Dr. Longo stated he did use 20 products over time from Johnson &amp; Johnson 21 talcum powders. 22 Q. And was the evidence that 23 was presented in Hopkins Exhibit 28, did 24 it involve Johnson's talcum powder</p>

<p style="text-align: right;">Page 494</p> <p>1 products?</p> <p>2 A. Yes, it did.</p> <p>3 Q. Was evidence that you relied</p> <p>4 on in the form of Pier Exhibit 47, did</p> <p>5 those also involve talc that was taken</p> <p>6 from sources used to supply Johnson's</p> <p>7 talcum powder products?</p> <p>8 MR. SILVER: Objection to</p> <p>9 form.</p> <p>10 MR. HEGARTY: Objection to</p> <p>11 form.</p> <p>12 THE WITNESS: Dr. Pier?</p> <p>13 BY MS. O'DELL:</p> <p>14 Q. Yes.</p> <p>15 A. To my recollection, yes. If</p> <p>16 you'd like, I can look at the paper and</p> <p>17 confirm that.</p> <p>18 Q. Let me ask you about</p> <p>19 Dr. Blount. You were asked previously</p> <p>20 about her publication in 1991.</p> <p>21 Did Dr. Blount test</p> <p>22 Johnson's Baby Powder?</p> <p>23 A. Yes. But again, if I looked</p> <p>24 at the reference I could give you -- I</p>	<p style="text-align: right;">Page 496</p> <p>1 go.</p> <p>2 BY MS. O'DELL:</p> <p>3 Q. Did the FDA conclude in</p> <p>4 Exhibit 37 that -- well, let me just ask</p> <p>5 the question this way.</p> <p>6 If you'll turn to Page 2 of</p> <p>7 Exhibit 37, what was the FDA's conclusion</p> <p>8 regarding the testing that they had</p> <p>9 performed on the cosmetic powders?</p> <p>10 Doctor, I'll direct you to</p> <p>11 the second-to-the-last paragraph at the</p> <p>12 bottom of the page, the middle sentence.</p> <p>13 Do you see that, "Beginning for these</p> <p>14 reasons"?</p> <p>15 A. Yes, I see that.</p> <p>16 Q. And what was the FDA's</p> <p>17 conclusion?</p> <p>18 A. "For these reasons, while</p> <p>19 FDA finds these results informative, they</p> <p>20 do not prove that most or all talc or</p> <p>21 talc-containing cosmetic products that</p> <p>22 are currently or currently marketed in</p> <p>23 the United States are likely to be free</p> <p>24 of asbestos contamination."</p>
<p style="text-align: right;">Page 495</p> <p>1 could give you specifics.</p> <p>2 Q. Okay. And do you recall</p> <p>3 that that -- did -- let me just ask it</p> <p>4 this way.</p> <p>5 Did Dr. Blount find that</p> <p>6 there was asbestos in the Johnson's Baby</p> <p>7 Powder samples that she tested?</p> <p>8 A. Yes. To my recollection,</p> <p>9 she did, yes.</p> <p>10 Q. You were asked about some</p> <p>11 testing that had been done by the FDA on</p> <p>12 certain cosmetic powders. Do you</p> <p>13 remember that? It was Exhibit 37.</p> <p>14 MS. O'DELL: And is that in</p> <p>15 the bottom of that stack, 37?</p> <p>16 Thanks, Mark. If you'll</p> <p>17 hand those to me. I appreciate</p> <p>18 it.</p> <p>19 THE WITNESS: Sorry. My</p> <p>20 microphone.</p> <p>21 MS. O'DELL: Oh, did it come</p> <p>22 off?</p> <p>23 THE VIDEOGRAPHER: Raise it</p> <p>24 up as high as possible. There you</p>	<p style="text-align: right;">Page 497</p> <p>1 Q. You were also asked a number</p> <p>2 of questions regarding the FDA response</p> <p>3 to Dr. Epstein's letter in April of 2014,</p> <p>4 Exhibit 33.</p> <p>5 Do you recall those</p> <p>6 questions?</p> <p>7 A. I recall that questions were</p> <p>8 asked in this regard, yes.</p> <p>9 Q. While at this point in the</p> <p>10 day, I wouldn't expect you to recall the</p> <p>11 specific question, but you recall those</p> <p>12 general discussions?</p> <p>13 A. Yes, I do.</p> <p>14 Q. All right. Let me ask you,</p> <p>15 if you wouldn't mind, to turn to Page 3</p> <p>16 of -- of Exhibit 33.</p> <p>17 And the second paragraph.</p> <p>18 A. Starting, "The survey</p> <p>19 found"?</p> <p>20 Q. Yes. Yes, ma'am.</p> <p>21 And as of April 2014, was it</p> <p>22 the FDA's conclusion that their testing</p> <p>23 results did not prove that</p> <p>24 talc-containing cosmetic powders</p>

<p style="text-align: right;">Page 498</p> <p>1 currently marketed in the U.S. are free 2 of asbestos contamination? 3 MR. HEGARTY: Objection to 4 form. 5 THE WITNESS: Yes. I can 6 read the sentence, "While FDA 7 found this data informative, the 8 results were limited by the fact 9 that only four suppliers submitted 10 samples and the number of products 11 used. They do not prove that all 12 talc containing cosmetic products 13 currently marketed in the United 14 States are free of asbestos 15 contamination." 16 BY MS. O'DELL: 17 Q. Okay. While we are on this 18 Exhibit 33, Doctor, if you'll turn to 19 Page 5 of the exhibit. About two-thirds 20 of the way down, the paragraph beginning, 21 "While." 22 A. "While there exists no 23 direct proof?" 24 Q. Yes. And would you mind</p>	<p style="text-align: right;">Page 500</p> <p>1 causing ovarian cancer? 2 MR. HEGARTY: Objection to 3 form. 4 THE WITNESS: They are 5 consistent with my opinion, yes. 6 BY MS. O'DELL: 7 Q. Let me ask you if you would, 8 Doctor, to -- I'll do it for you. 9 Because it was marked here. 10 I'm going to hand to you the 11 Health Canada draft screening assessment 12 that was marked previously as Exhibit 9. 13 A. I see it. 14 Q. And let me ask you if you 15 would please, Doctor, first, did you 16 submit your report in this case prior to 17 Health Canada issuing the draft causal 18 assessment? 19 A. I submitted my -- my final 20 report November 15th or 16th. I'm not 21 quite clear on the date. And received 22 this or saw it for the first time in 23 January. So it did not go into my -- it 24 was not cited in my report and was not</p>
<p style="text-align: right;">Page 499</p> <p>1 reading, you know, the -- the -- those 2 first two sentences of that paragraph, 3 please? 4 A. "While there exists no 5 direct proof of talc and ovarian 6 carcinogenesis, the potential for 7 particulates to migrate from the 8 peritoneum" -- "the perineum and vagina 9 to the peritoneal cavity is 10 indisputable." 11 Q. And then if you'll read the 12 next sentence? 13 A. "It is, therefore, plausible 14 that perineal talc and other particulate 15 that reaches the endometrial cavity, the 16 fallopian tubes and ovaries and the 17 peritoneum may elicit a foreign body-type 18 reaction and an inflammatory response 19 that in some exposed women may progress 20 to epithelial cancers." 21 Q. And are those statements 22 written by the FDA consistent with your 23 opinions regarding the biologic 24 plausibility of talcum powder products</p>	<p style="text-align: right;">Page 501</p> <p>1 reviewed for my report. 2 Q. And by virtue of the fact 3 that came out after your report, did -- 4 did the health -- strike that and start 5 again. 6 Did the Health Canada 7 assessment inform your opinions in this 8 case? 9 A. It -- it could not have 10 informed my opinion that's written out in 11 the report. It was compelling evidence 12 that helped support the opinion that I 13 came to. 14 Q. Did it confirm your 15 opinions? 16 MR. HEGARTY: Objection to 17 form. 18 THE WITNESS: Yes. It 19 confirmed my opinions on many 20 lines, including methodology. 21 BY MS. O'DELL: 22 Q. If you'll look at Page 18 of 23 the assessment. 24 A. Yes. I see it.</p>

<p style="text-align: right;">Page 502</p> <p>1 Q. And looking at the 2 literature that is cited in this section, 3 did you cite in support of your opinions 4 Keskin 2009? 5 A. Keskin 2009, yes. 6 Q. And did you -- of course we 7 talked about it before. You cited 8 Penninkilampi 2018? 9 A. Yes, I did. 10 Q. And did you cite other 11 references included in the mode of action 12 discussion that was undertaken by Health 13 Canada on Pages 18, 19 and, you know, 20 14 of the Health Canada assessment? 15 A. Yes, I did. Do you want me 16 to tell you which ones? 17 Q. Just give us a few. Just 18 give us a few. 19 A. Henderson 1971. These are 20 the ones that come to mind readily. 21 Edelstam 1997. Egli and Newton 1961. De 22 Boer in 1972. Venter and Iturralde, 23 1979. Heller 1996. Cramer in 2007. 24 Would you like me to go on?</p>	<p style="text-align: right;">Page 504</p> <p>1 mechanism for the cause of cancer? 2 MR. HEGARTY: Objection to 3 form. 4 THE WITNESS: Biological 5 plausibility. 6 BY MS. O'DELL: 7 Q. They -- let me ask a better 8 question. Did they -- did they discuss 9 chronic inflammation, inflammation as a 10 biologically plausible mechanism for the 11 development of ovarian cancer? 12 A. Yes, they did. 13 Q. Did they discuss the role of 14 reactive oxygen species as part of the 15 biologically plausible mechanism of talc 16 in the development of ovarian cancer? 17 MR. HEGARTY: Objection to 18 form. 19 THE WITNESS: Oxidative 20 stress, yes. Yeah. React -- ROS. 21 Oxidative stress. 22 May I give the statement? 23 BY MS. O'DELL: 24 Q. Yes.</p>
<p style="text-align: right;">Page 503</p> <p>1 Q. So it's fair to say that 2 many of the references that you read, 3 reviewed, relied on in your report are 4 some of the same studies that Health 5 Canada relied on in their causal 6 assessment? 7 MR. HEGARTY: Objection to 8 form. 9 THE WITNESS: Yes. This was 10 very validating for my -- my 11 report in my opinion. 12 BY MS. O'DELL: 13 Q. Were you aware of the -- of 14 the assessment prior to it being issued 15 to the public? 16 A. Not at all. It was -- it 17 came out in late 2018, in December. 18 Q. In the assessment that was 19 undertaken by Health Canada, did they 20 assign any numerical weights in the 21 causal assessment to certain studies? 22 A. No, they do not. 23 Q. Did they discuss 24 inflammation as a sort of recognized</p>	<p style="text-align: right;">Page 505</p> <p>1 A. With respect to talc, 2 specifically local chronic irritation 3 leading to inflammatory response is one 4 possible mechanism of tumor progression 5 that is frequently hypothesized. 6 Q. And that's consistent with 7 your -- with your opinion in this case? 8 MR. HEGARTY: Objection to 9 form. 10 THE WITNESS: Yes. 11 BY MS. O'DELL: 12 Q. Is that consistent with your 13 opinion in this case? 14 A. Yes, it is. 15 Q. Did they discuss migration 16 as part of the biologically plausible 17 mechanism for the connection between 18 perineal use of talc and development of 19 ovarian cancer? 20 A. Yes, they did. 21 Q. Okay. Did they, on Page 15 22 and 16, did they discuss some of the 23 animal studies that you reference and 24 rely on in reaching your opinions in this</p>

<p style="text-align: right;">Page 506</p> <p>1 case?</p> <p>2 A. Yes, they do.</p> <p>3 MR. HEGARTY: Objection to</p> <p>4 form.</p> <p>5 THE WITNESS: And --</p> <p>6 BY MS. O'DELL:</p> <p>7 Q. Excuse me.</p> <p>8 A. They include Hamilton et</p> <p>9 al., 1984. Keskin 2009. Hamilton 1984</p> <p>10 again. Keskin again.</p> <p>11 Q. Okay. And if you'll turn to</p> <p>12 Page 21. You'll see at the top of the</p> <p>13 page, they have a section on biologic</p> <p>14 plausibility.</p> <p>15 A. Yes, they do.</p> <p>16 Q. Is -- is their discussion of</p> <p>17 biological plausibility as outlined on</p> <p>18 Page 21 consistent with your opinions in</p> <p>19 this case?</p> <p>20 MR. HEGARTY: Objection to</p> <p>21 form.</p> <p>22 THE WITNESS: Definitely</p> <p>23 consistent. Particles of talc are</p> <p>24 hypothesized to migrate into the</p>	<p style="text-align: right;">Page 508</p> <p>1 Q. Counsel directed your</p> <p>2 attention to the sentence -- counsel for</p> <p>3 Johnson &amp; Johnson -- direct -- directed</p> <p>4 your attention to the sentence near the</p> <p>5 bottom of the left column.</p> <p>6 A. An important finding of this</p> <p>7 study is that talc use?</p> <p>8 Q. Yeah, the -- the potential</p> <p>9 mechanism by which genital talc is</p> <p>10 associated with an increased risk of</p> <p>11 ovarian cancer --</p> <p>12 A. I'm sorry. Again,</p> <p>13 discussion on the left side?</p> <p>14 Q. Yes. At the bottom of the</p> <p>15 first paragraph, the last sentence.</p> <p>16 A. Okay. I'm sorry.</p> <p>17 "Potential mechanism by which general</p> <p>18 talc associated with an increased risk of</p> <p>19 ovarian cancer hence remains unclear."</p> <p>20 Q. And Johnson &amp; Johnson's</p> <p>21 counsel asked you about that sentence.</p> <p>22 A. Yes, they did.</p> <p>23 Q. But they didn't ask you</p> <p>24 about other sentences in this -- this</p>
<p style="text-align: right;">Page 507</p> <p>1 pelvis and ovarian tissue causing</p> <p>2 irritation and inflammation. And</p> <p>3 the presence of talc in the</p> <p>4 ovaries as I discussed previously</p> <p>5 has been documented by Heller in</p> <p>6 1996.</p> <p>7 BY MS. O'DELL:</p> <p>8 Q. Great. Thank you.</p> <p>9 Doctor, you were also asked</p> <p>10 some questions about the Penninkilampi</p> <p>11 paper.</p> <p>12 Do you recall those?</p> <p>13 A. I do recall being asked,</p> <p>14 yeah, from that.</p> <p>15 Q. Potentially the most</p> <p>16 difficult name to pronounce in the</p> <p>17 litigation.</p> <p>18 The Penninkilampi paper</p> <p>19 was -- was marked as Exhibit 34. Do you</p> <p>20 recall that?</p> <p>21 A. I see, I see it here. Yes.</p> <p>22 Q. And if I can ask you to turn</p> <p>23 to Page 45.</p> <p>24 A. I see Page 45.</p>	<p style="text-align: right;">Page 509</p> <p>1 paper, fair?</p> <p>2 A. That's fair.</p> <p>3 Q. So if you'll look to the</p> <p>4 right column on Page 45. Do you see the</p> <p>5 sentence beginning "if chronic</p> <p>6 inflammation"?</p> <p>7 A. I do. "If chronic</p> <p>8 inflammation due to ascending foreign</p> <p>9 bodies is indeed the mechanism by which</p> <p>10 talc use is associated with increased</p> <p>11 ovarian cancer risks, then the results</p> <p>12 fit the picture."</p> <p>13 Q. Is -- is that statement that</p> <p>14 the authors of the Penninkilampi study</p> <p>15 included in their report, excuse me, in</p> <p>16 their article, is that consistent with</p> <p>17 your opinions in this case?</p> <p>18 A. It is consistent.</p> <p>19 Q. And does it confirm the</p> <p>20 opinions that you reached in this case?</p> <p>21 A. It acts to confirm, yes, it</p> <p>22 does.</p> <p>23 Q. Okay. You were asked</p> <p>24 about -- a number of questions about</p>

<p style="text-align: right;">Page 510</p> <p>1 asbestos and the specific amount of 2 asbestos that would be introduced with 3 the perineal application of -- of talc. 4 A. Yes -- 5 Q. And let me ask you -- 6 A. -- I recall. 7 Q. You recall those questions? 8 A. Yes, I do. 9 Q. Is there any safe level of 10 asbestos -- 11 MR. HEGARTY: Objection to 12 form. 13 BY MS. O'DELL: 14 Q. -- in the perineum? 15 A. My opinion and conclusion is 16 no. 17 Q. Is asbestos a known potent 18 carcinogen? 19 A. It is. According -- 20 Q. Excuse me. Please go ahead. 21 A. According to the regulators 22 and the documents, it is, yes, a known 23 carcinogen, and it's extremely potent. 24 If you look at the effects that it causes</p>	<p style="text-align: right;">Page 512</p> <p>1 deposition of Robert Glenn in your 2 report? 3 A. I'm sorry, the deposition of 4 who? 5 Q. Robert Glenn. Page 6, about 6 midway down. 7 A. Yes, I did. "Because 8 asbestos is a known carcinogen, its 9 presence in cosmetic talc is 10 unacceptable, FDA 2012, FDA 2015." 11 Q. And do you recall that -- 12 was Mr. Glenn a former director of the 13 National Institute for Occupational 14 Safety and Health or NIOSH? 15 A. Yes. 16 Q. And what did Mr. Glenn 17 testify to regarding the presence of 18 asbestos in talc-based products? 19 A. He says, "As stated in a 20 recent deposition, that if there were a 21 fiber of asbestos in talcum-based 22 products, it would certainly 'provide a 23 biologically plausible mechanism for 24 increased lung disease' and that he</p>
<p style="text-align: right;">Page 511</p> <p>1 and at the dose levels that it causes 2 these effects. 3 Q. And of course IARC has -- 4 A. IARC has classified it as a 5 Class 1A. 6 Q. And did you review and rely 7 on IARC's conclusion regarding asbestos? 8 A. I did. 9 Q. Excuse me. And its 10 contribution to the -- to the development 11 of ovarian cancer? 12 A. Yes, I did. 13 Q. Did you review and rely on 14 IARC's conclusions regarding fibrous talc 15 or talc in an asbestiform habit regarding 16 its ability to cause ovarian cancer? 17 MR. HEGARTY: Objection to 18 form. 19 THE WITNESS: I did. 20 BY MS. O'DELL: 21 Q. If you'll turn to Page 6 in 22 your report. 23 A. Yes, I see it. 24 Q. Did you -- did you cite the</p>	<p style="text-align: right;">Page 513</p> <p>1 suspected that it would also have a 2 similar mechanism of disease in other 3 tissues and organs." 4 Q. And you were asked a number 5 of questions about the different 6 constituents of talcum powder products. 7 A. Yes. 8 Q. If talcum powder products 9 did not contain asbestos, would that 10 change your opinion about the biological 11 plausible mechanism of -- that explains 12 talc -- talc-based products causing 13 ovarian cancer? 14 A. No, it would not. 15 Q. You were asked questions 16 about a Dr. Neel from NYU. 17 A. The NYU Cancer Center. 18 Q. And you were asked if you 19 knew Dr. Neel. 20 A. Yes, I recall the question. 21 Q. And what's your 22 understanding of Dr. Neel's position? 23 A. My understanding is that he 24 is the chair -- he may not be called the</p>



<p style="text-align: right;">Page 514</p> <p>1 chair -- but he is the director of the 2 cancer center for NYU Langone Health and 3 NYU Medical School. It morphs into 4 different names. 5 Q. And in regard to the 6 toxicity of talcum powder products and 7 its effects, toxicological effects, 8 would -- would you be more knowledgeable 9 about those particular effects than a 10 clinician who diagnoses and treats 11 ovarian cancer? 12 MR. HEGARTY: Objection to 13 form. 14 BY MS. O'DELL: 15 Q. Like Dr. Neel? 16 A. I'm a toxicologist, and so 17 my main area of focus and understanding 18 and literature has to do with toxicology, 19 toxicological mechanisms, toxicological 20 effects. 21 Q. So -- 22 A. So my knowledge base in 23 those areas would -- I would suspect very 24 strongly would exceed that of Dr. Neel's,</p>	<p style="text-align: right;">Page 516</p> <p>1 form. 2 THE WITNESS: Could you 3 clarify that question? 4 BY MS. O'DELL: 5 Q. Yeah. It was a bad 6 question. I'm sorry. I'm getting tired. 7 A. If you're asking -- would 8 you like to ask -- rephrase it, or should 9 I give you my thought of what you were 10 trying to ask? 11 Q. Well, why don't you 12 interpret my question, and I'll follow 13 up. 14 A. If you're asking me if 15 nickel was a component of the non-fibrous 16 talc, then was nickel also in place when 17 it was treated, when the cells were 18 treated? 19 Q. That's correct. 20 A. Yes, if nickel was in the 21 non-fibrous talc then, yes, it was also 22 there when the cells were being exposed. 23 Q. And so -- and that would be 24 true of chromium and cobalt?</p>
<p style="text-align: right;">Page 515</p> <p>1 who is a clinician. 2 Q. You were asked some 3 questions about the Shukla paper. 4 A. Yes. 5 Q. And -- and the Shukla paper 6 involved the use of talcum powder? 7 A. Yes. 8 Q. And if the -- 9 A. Do you recall what exhibit 10 that was? 11 Q. I think it was the last 12 exhibit. 13 A. May I have a copy? 14 Q. 48. And did the Shukla 15 study involve the testing of, or the use 16 of talcum powder? 17 A. Yes. As they call it, 18 non-fibrous talc. 19 Q. And if the talcum powder 20 used in the Shukla study contained 21 nickel, that would be -- the data that 22 was reported in that study would be 23 relevant for the effects of nickel, fair? 24 MR. HEGARTY: Objection to</p>	<p style="text-align: right;">Page 517</p> <p>1 A. Yes. 2 Q. And so, the results from the 3 Shukla study would have bearing on the 4 effect of those heavy metals if contained 5 in talcum powder? 6 MR. HEGARTY: Objection to 7 form. 8 THE WITNESS: Yes, if they 9 were -- yes, as constituents, they 10 would -- I would imagine and know 11 that they would play -- they could 12 be playing a role in the 13 toxicity -- the cell toxicity or 14 the gene expression changes that 15 were observed. 16 BY MS. O'DELL: 17 Q. Thank you. And in regard to 18 your opinions related to cobalt, 19 chromium, and nickel, you were asked a 20 number of questions about whether there 21 were any human studies measuring the 22 effect of -- of nickel at -- in the 23 ovary. Do you recall that? 24 A. I recall that question --</p>

<p style="text-align: right;">Page 518</p> <p>1 those questions.</p> <p>2 Q. Would it be possible to</p> <p>3 design a study in humans where nickel was</p> <p>4 deposited at their ovary to see if a</p> <p>5 female would develop ovarian cancer?</p> <p>6 A. I think I answered and said</p> <p>7 that would be ridiculous in the sense</p> <p>8 that this would be totally unethical to</p> <p>9 take a known carcinogen or a classified</p> <p>10 1A carcinogen and use it for experimental</p> <p>11 studies in humans by placing it in the</p> <p>12 perineal -- or anywhere within the body</p> <p>13 intentionally.</p> <p>14 Q. And would that also be true</p> <p>15 for similar reasons for cobalt and</p> <p>16 chromium?</p> <p>17 A. Yes.</p> <p>18 Q. Would the same also be true</p> <p>19 of designing a study that applied</p> <p>20 asbestos to a female's ovary for purposes</p> <p>21 of seeing if she developed cancer?</p> <p>22 A. I'm smiling because it holds</p> <p>23 true for any -- any known or suspected</p> <p>24 carcinogen cannot be used intentionally</p>	<p style="text-align: right;">Page 520</p> <p>1 IRBs.</p> <p>2 Q. Okay. You looked at, as I</p> <p>3 understand it, for your purposes of your</p> <p>4 task in this case, you looked at the</p> <p>5 issue of biologic plausibility for</p> <p>6 perineal talc use and ovarian cancer.</p> <p>7 A. Yes, I did.</p> <p>8 Q. Did you -- did you -- was</p> <p>9 that inquiry focused on epithelial</p> <p>10 ovarian cancer in particular?</p> <p>11 A. It -- it was -- most, if not</p> <p>12 all the studies I looked at in animals</p> <p>13 and -- were associated with epithelial</p> <p>14 ovarian cancer.</p> <p>15 Some studies in humans did</p> <p>16 look -- did break out the differences.</p> <p>17 Q. Let me ask you if you</p> <p>18 wouldn't mind, to turn to Page 8 of your</p> <p>19 report. And you'll look at the top of</p> <p>20 the page. In the first full paragraph,</p> <p>21 middle of the -- that paragraph discusses</p> <p>22 Dr. Longo and Rigler's recent report that</p> <p>23 reports that talcum powder products</p> <p>24 manufactured by Johnson's Baby Powder and</p>
<p style="text-align: right;">Page 519</p> <p>1 on a human being for testing. It's</p> <p>2 unethical, and would probably in all</p> <p>3 likelihood not be approved by the</p> <p>4 institutional review board of academic</p> <p>5 institutions or any reputable scientists.</p> <p>6 Q. Would that be true of</p> <p>7 fibrous talc?</p> <p>8 MR. HEGARTY: Objection to</p> <p>9 form.</p> <p>10 BY MS. O'DELL:</p> <p>11 Q. You may answer.</p> <p>12 A. That would be true of</p> <p>13 fibrous talc.</p> <p>14 Q. Would it be true of platy</p> <p>15 talc, if there is such a thing as pure</p> <p>16 platy talc?</p> <p>17 A. If there is a -- if there is</p> <p>18 any suspicion that any product, including</p> <p>19 platy talc, might be involved in</p> <p>20 producing inflammation or any other type</p> <p>21 of adverse health effect, then it would</p> <p>22 be very unethical to go ahead and</p> <p>23 intentionally use that in a human study,</p> <p>24 in my opinion, and in the opinion of most</p>	<p style="text-align: right;">Page 521</p> <p>1 Shower to Shower have contained and</p> <p>2 continue to contain asbestos. Do you see</p> <p>3 that sentence?</p> <p>4 A. Yes, I do.</p> <p>5 Q. And then it goes on, you go</p> <p>6 on to report his results from test of</p> <p>7 samples manufactured from the 1960s and</p> <p>8 1990s.</p> <p>9 A. Through -- through the</p> <p>10 1990s.</p> <p>11 Q. Through the 1990s, that's</p> <p>12 correct.</p> <p>13 And you -- you have a</p> <p>14 footnote here to Footnote 7?</p> <p>15 A. Yes.</p> <p>16 Q. And Dr. Longo and Rigler's</p> <p>17 report is noted in the footnote and it's</p> <p>18 dated November 14, 2018.</p> <p>19 A. Yes.</p> <p>20 Q. Do you see that?</p> <p>21 A. Yes.</p> <p>22 Q. And just, did you have in</p> <p>23 your possession and review Dr. Rigler and</p> <p>24 Longo's November 14, 2018, report during</p>

<p style="text-align: right;">Page 522</p> <p>1 the completion of your own report?</p> <p>2 A. I had it available prior to</p> <p>3 the submission of my final report, yes.</p> <p>4 The only thing I did not</p> <p>5 have was the December 2018 supplement.</p> <p>6 Q. His most recent supplement?</p> <p>7 A. His most recent supplement,</p> <p>8 yes.</p> <p>9 Q. I think just to be clear,</p> <p>10 that -- was his most recent supplemental</p> <p>11 report you're referring to, was that the</p> <p>12 report dated in January, I think 16th or</p> <p>13 15th of this month?</p> <p>14 A. It was sometime in January.</p> <p>15 Q. Okay.</p> <p>16 A. Yes. I could answer that</p> <p>17 question specifically if I saw the</p> <p>18 exhibit.</p> <p>19 Q. And I've handed you what's</p> <p>20 been marked I think as Exhibit --</p> <p>21 A. 3.</p> <p>22 Q. 3. And is Exhibit 3 the</p> <p>23 supplemental report --</p> <p>24 A. Yes, it is.</p>	<p style="text-align: right;">Page 524</p> <p>1 that Ms. O'Dell asked you.</p> <p>2 First of all, you were</p> <p>3 referred to Page 12 of your report</p> <p>4 under -- under Section C, Fragrances.</p> <p>5 Would you go to that portion of your</p> <p>6 report please?</p> <p>7 A. I will, thank you. Yes.</p> <p>8 I'm here.</p> <p>9 Q. You were asked about this</p> <p>10 part of your report being identical to</p> <p>11 the same part of Smith-Bindman's report.</p> <p>12 Do you recall being asked those</p> <p>13 questions?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 THE WITNESS: Smith --</p> <p>17 Smith-Bindman report? I'm sorry,</p> <p>18 I don't recall -- oh, in the</p> <p>19 beginning of the deposition?</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. Yes.</p> <p>22 A. Okay. That was a long time</p> <p>23 ago.</p> <p>24 Q. First of all, are you aware</p>
<p style="text-align: right;">Page 523</p> <p>1 Q. -- that you reviewed</p> <p>2 recently?</p> <p>3 A. I'm sorry, yes.</p> <p>4 Q. And what's the date on the</p> <p>5 report?</p> <p>6 A. January 15, 2019.</p> <p>7 MS. O'DELL: Okay. I have</p> <p>8 nothing further, Doctor. Thank</p> <p>9 you.</p> <p>10 MR. HEGARTY: Take a break.</p> <p>11 I need to use the restroom.</p> <p>12 THE VIDEOGRAPHER: The time</p> <p>13 is 8:10 p.m. Going off the</p> <p>14 record.</p> <p>15 (Short break.)</p> <p>16 THE VIDEOGRAPHER: We are</p> <p>17 back on the record. The time is</p> <p>18 8:16 p.m.</p> <p>19 - - -</p> <p>20 EXAMINATION</p> <p>21 - - -</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Dr. Zelikoff, I have some</p> <p>24 questions in follow-up to the questions</p>	<p style="text-align: right;">Page 525</p> <p>1 that Dr. Crowley has been deposed in this</p> <p>2 litigation?</p> <p>3 A. Yes.</p> <p>4 Q. Did you read his deposition?</p> <p>5 A. I did.</p> <p>6 Q. When did you read his</p> <p>7 deposition?</p> <p>8 A. I'm sorry, I don't recall</p> <p>9 the exact date.</p> <p>10 May I see Dr. Crowley's</p> <p>11 deposition?</p> <p>12 Q. Well, I just asked you if</p> <p>13 you had read it. That's my only</p> <p>14 question.</p> <p>15 Other than Dr. Crowley's</p> <p>16 deposition, have you read the depositions</p> <p>17 of any other plaintiffs' experts deposed</p> <p>18 in the MDL, this litigation?</p> <p>19 A. Any of the other plaintiffs'</p> <p>20 depositions?</p> <p>21 Q. Correct.</p> <p>22 A. Dr. Dydek.</p> <p>23 Q. Anybody else?</p> <p>24 A. I'm looking to see the</p>

<p style="text-align: right;">Page 526</p> <p>1 others. 2 Q. It's at the end of Exhibit 3 B. 4 A. Okay. Thank you. Thank 5 you. 6 Q. Well, my question -- let me 7 ask a different question. Let me ask 8 whether you have reviewed the MDL 9 depositions; that is, the depositions 10 that plaintiffs' experts have taken in 11 this litigation over their expert reports 12 besides Dr. Crowley? 13 MS. O'DELL: Object to form. 14 THE WITNESS: Dr. Longo. 15 Sorry. 16 BY MR. HEGARTY: 17 Q. Dr. Longo has not yet been 18 deposed in -- 19 A. I read his report. 20 Q. -- for his MDL report. 21 No, I'm talking about the 22 deposition -- 23 A. I'm sorry. 24 Q. -- of an expert who has</p>	<p style="text-align: right;">Page 528</p> <p>1 Q. Page 12. 2 A. "There are more than 150 3 different chemicals"? 4 Q. Those four sentences, or 5 three -- or strike that. 6 The second sentence in that 7 section is not in Dr. Crowley's report. 8 He did not write, "I reviewed the expert 9 report of Dr. Michael Crowley that 10 concludes that some of these chemicals 11 may contribute to the inflammatory 12 response, toxicity, and potential 13 toxicity of Johnson &amp; Johnson's talcum 14 powder products." 15 MS. O'DELL: Objection. 16 BY MR. HEGARTY: 17 Q. That sentence is not in 18 Dr. Crowley's report? 19 MS. O'DELL: Objection. 20 THE WITNESS: I'm terribly 21 sorry. I'm going to silence that 22 or we can and talk over it. 23 MS. O'DELL: Go ahead and 24 silence it.</p>
<p style="text-align: right;">Page 527</p> <p>1 been -- who is being deposed about their 2 report in the MDL. 3 You said Dr. Crowley. Have 4 you read anyone else's deposition that 5 have discussed their report in the MDL? 6 MS. O'DELL: I think there 7 may be some confusion between 8 report and deposition. 9 THE WITNESS: Yes. There 10 was. 11 BY MR. HEGARTY: 12 Q. Did you read Dr. Crowley's 13 deposition over his report? 14 A. I read Dr. Crowley's report. 15 I'm sorry. I stand corrected. 16 Q. Dr. Crowley's report does 17 not contain the sentences that you've 18 included under your Section C, 19 fragrances, correct? 20 MS. O'DELL: Object to the 21 form. 22 THE WITNESS: What page are 23 we going back to, please? 24 BY MR. HEGARTY:</p>	<p style="text-align: right;">Page 529</p> <p>1 (Brief interruption.) 2 MR. HEGARTY: Let's go off 3 the record. 4 THE VIDEOGRAPHER: The time 5 is 8:21 p.m. Off the record. 6 (Whereupon, a discussion was 7 held off the record.) 8 THE VIDEOGRAPHER: The time 9 is 8:21 p.m. Back on the record. 10 BY MR. HEGARTY: 11 Q. The second sentence under 12 your section fragrances is nowhere in 13 Dr. Crowley's report? 14 A. That -- 15 MS. O'DELL: Objection to 16 form. 17 THE WITNESS: That sentence 18 is not there, but I concluded that 19 when he talked about the 20 fragrances, I concluded that -- I 21 inferred from his -- from his 22 report, that these chemicals do 23 contribute to the inflammatory 24 response, toxicity and potential</p>

<p style="text-align: right;">Page 530</p> <p>1 carcinogenicity. 2 BY MR. HEGARTY: 3 Q. The sentence, "I concur with 4 his opinion," is not in Dr. Crowley's 5 report, is it? 6 A. No. That was my opinion. 7 Q. That same opinion, stated 8 exactly the same way, is in the 9 Dr. Smith-Bindman report, correct? 10 A. Can I see that report? 11 Q. Do you recall without 12 looking at it, that that same section is 13 in her report? 14 A. I do not. I do not recall. 15 Q. Okay. Did you -- do you 16 know -- have you ever spoken to 17 Dr. Smith-Bindman? 18 A. Not at all. 19 Q. Do you know who she is? 20 A. I don't. 21 Q. Do you know her expertise? 22 A. I do not. 23 Q. Have you ever heard her name 24 before today?</p>	<p style="text-align: right;">Page 532</p> <p>1 BY MR. HEGARTY: 2 Q. Doctor, you -- 3 A. -- that included talc. 4 Q. Doctor, you testified 5 earlier in this deposition that your 6 information as it relates to talc and 7 ovarian cancer came from the media and 8 discussion with colleagues, correct? 9 A. Prior to being contacted. 10 Q. Right. So prior to being 11 contacted for counsel for plaintiffs, you 12 had no expertise in talc and ovarian 13 cancer, correct? 14 A. As a toxicologist -- I'm 15 sorry. I'm getting hung up on the word 16 "expert" as you're using it. As a 17 toxicologist, I am familiar with talc. I 18 am familiar with much of the toxicity of 19 it. But the primary -- in discussing 20 talc and its relationship to cancer, it 21 was through colleagues and the media, 22 yes, correct. 23 Q. You had not studied, prior 24 to being contacted by plaintiffs'</p>
<p style="text-align: right;">Page 531</p> <p>1 A. Not -- not to my knowledge. 2 But I would like to see -- to refresh my 3 memory, if it's available. 4 Q. You were asked about your 5 expertise as it relates to talc and 6 inflammation. Before you were contacted 7 by Ms. Emmel, you had no expertise in 8 talc, correct? 9 MS. O'DELL: Objection to 10 form. 11 THE WITNESS: I performed no 12 scientific studies in it. 13 BY MR. HEGARTY: 14 Q. You also reviewed no 15 scientific studies concerning talc, 16 correct? 17 MS. O'DELL: Objection to 18 form. 19 THE WITNESS: I have 20 reviewed papers. I am editor and 21 associate editor on an editorial 22 board so that in my past 23 experience, I likely reviewed 24 papers --</p>	<p style="text-align: right;">Page 533</p> <p>1 counsel, any issues reported in the 2 medical literature with regard to talc 3 and ovarian cancer, correct? 4 A. I have not studied in my 5 laboratory, that's correct. 6 Q. You also did not review any 7 literature discussing talc and ovarian 8 cancer prior to being contacted by 9 counsel for plaintiff? 10 A. That is correct. 11 Q. Prior to being contacted by 12 counsel for plaintiffs you had not 13 studied the toxicology -- toxic aspects, 14 if any, of talc, correct? 15 MS. O'DELL: Object to the 16 form. 17 THE WITNESS: I have -- as I 18 stated, I have reviewed papers 19 that have looked at it. And I've 20 reviewed them for acceptance into 21 journals. 22 BY MR. HEGARTY: 23 Q. Can you cite for us today 24 any such papers?</p>

<p style="text-align: right;">Page 534</p> <p>1 A. Over my career, I cannot. 2 Sorry. 3 Q. Can you identify any study 4 you have published that investigated or 5 discussed the toxicity of cobalt? 6 A. I've written review articles 7 on the toxicology of metals in general 8 and cobalt was in there, and in book 9 chapters. 10 Q. But it's your testimony that 11 you have written review papers where you 12 discussed the toxicity of cobalt? 13 A. I did not say review papers. 14 I said book chapters. 15 Q. So you had written a book 16 chapter to discuss the toxicity of 17 cobalt? 18 MS. O'DELL: Objection to 19 form. 20 THE WITNESS: I was an 21 editor of a book, several books -- 22 two books actually, which looked 23 at the toxicity of cobalt -- 24 looked at the toxicity of metals.</p>	<p style="text-align: right;">Page 536</p> <p>1 nickel? 2 A. Yes. 3 Q. What published article have 4 you -- have you written discussing the 5 toxicity of nickel? 6 A. One that comes to my mind, 7 without looking at my CV, is an early 8 publication associated with the 9 immunology and immunotoxicity of nickel 10 in fish. 11 Q. What nickel -- was it a 12 nickel compound? 13 A. It was a nickel chloride, a 14 soluble nickel compound. 15 Q. Are nickel compounds in 16 Johnson's Baby Powder? 17 A. Nickel -- according to the 18 J&amp;J documents and other -- other internal 19 documents, yes. 20 Q. Okay. What nickel compounds 21 are in Johnson's Baby Powder? 22 A. The report indicates nickel. 23 It does not break it down to a particular 24 salt or a particular compound of nickel.</p>
<p style="text-align: right;">Page 535</p> <p>1 And cobalt, to my recollection, 2 was in both of those books. 3 BY MR. HEGARTY: 4 Q. Did you write those 5 chapters? 6 A. I reviewed those chapters 7 for publication in those books. 8 Q. My question was did you 9 write those chapters? 10 A. I'm sorry. Did I write 11 those chapters on cobalt? No, I did not. 12 Q. Have you ever written any 13 published chapter or article discussing 14 the toxicity of cobalt? 15 A. I have not -- 16 MS. O'DELL: Objection. 17 THE WITNESS: -- written an 18 article in the area of cobalt, but 19 I am familiar with metals, very 20 much so from the department and 21 the research that I do. 22 BY MR. HEGARTY: 23 Q. Have you written any 24 published article discussing toxicity of</p>	<p style="text-align: right;">Page 537</p> <p>1 Q. Have you written any papers 2 looking at the toxicity of chromium-3? 3 A. I'm going to look in my -- 4 in my CV. 5 Q. Well, without looking at 6 your CV, for purposes of time, can you 7 recall any such article? 8 MS. O'DELL: If you need to 9 take a moment, Doctor, feel free 10 to. 11 MR. HEGARTY: We'll go off 12 the record if she needs to take a 13 moment. 14 BY MR. HEGARTY: 15 Q. Because I qualified my 16 question by asking you, without looking 17 at your CV, are you able to cite an 18 article that you've written? 19 A. I want to give actual data 20 to you. In my mind, I recall a paper 21 that I wrote with Dr. Max Costa on 22 chromium. And -- and possibly with Toby 23 Rossman. But without looking, I can't be 24 absolutely sure.</p>



<p style="text-align: right;">Page 538</p> <p>1 Q. You refer over on pages -- 2 or on Page 25 of your report -- 3 A. Yes. 4 Q. -- to -- 5 A. Talc-induced inflammation. 6 Q. Well, let me finish my 7 question. 8 A. Oh, I'm sorry. 9 Q. You refer over on Page 25 in 10 the fourth paragraph to an abstract and 11 other material by Dr. Harper and 12 Dr. Saed, correct? 13 A. Yes. In the last -- in the 14 last paragraph, in the last sentence. 15 Q. And none of those 16 publications refer to testing using 17 Johnson's Baby Powder, correct? 18 MS. O'DELL: Objection to 19 form. 20 THE WITNESS: To my 21 knowledge, no, but I would have to 22 look at the paper to be absolutely 23 sure. But they did use talc, 24 yes -- talcum powder.</p>	<p style="text-align: right;">Page 540</p> <p>1 the statements that you were asked about 2 by plaintiffs' counsel in your expert 3 report, correct? 4 MS. O'DELL: Object to form. 5 THE WITNESS: Not without 6 checking my document, I can't 7 answer conclusively. 8 BY MR. HEGARTY: 9 Q. You did not rely on this 10 portion of the FDA's letter for purposes 11 of your opinions in this case, correct? 12 MS. O'DELL: Regarding the 13 asbestos testing? 14 BY MR. HEGARTY: 15 Q. The portion that I just 16 referred you to, the top two paragraphs 17 at Page 3. 18 A. They do not prove that all 19 talc-containing cosmetic products 20 currently marketed in the United States 21 are free of asbestos. Is that -- 22 Q. Yes. 23 A. Okay. And the question was? 24 Q. You did not refer to that</p>
<p style="text-align: right;">Page 539</p> <p>1 BY MR. HEGARTY: 2 Q. Can you cite for me any 3 animal or cell studies that you reviewed 4 for purposes of preparing your report 5 that tested Johnson's Baby Powder other 6 than Dr. Saed's recent manuscript? 7 A. I know I have, I just can't 8 recall. 9 You are talking about 10 publications, correct? 11 Q. Yes. That you've cited in 12 your report. 13 A. I can't find it at the 14 moment, so I would have to say no. 15 Q. Did you find Exhibit 33, the 16 FDA's response letter to Dr. Epstein. 17 A. Thank you. 18 Q. You were referred to Page 3 19 in FDA's statement with regard to its 20 testing of samples of cosmetic grade raw 21 material talc and cosmetic products for 22 asbestos? 23 A. Yes, I did. 24 Q. You did not refer to any of</p>	<p style="text-align: right;">Page 541</p> <p>1 statement in your report, correct? 2 A. That is correct, yes. 3 Q. Also you did not cite on 4 Page 5 in your report the statement that 5 "it is, therefore, plausible that 6 perineal talc and other particulate that 7 reaches the endometrial cavity, et 8 cetera, may elicit foreign body-type 9 reaction and inflammatory response that 10 in some exposed women may progress to 11 epithelial cancers." 12 You did not cite that 13 sentence in your report either, correct? 14 A. I did not -- 15 MS. O'DELL: Objection to 16 form. 17 THE WITNESS: I did not cite 18 that sentence in my report either. 19 However, this document was in 20 my -- in my citations in the 21 overall reliance -- reliance 22 document. 23 BY MR. HEGARTY: 24 Q. With regard to the draft</p>

<p style="text-align: right;">Page 542</p> <p>1 screening assessment by Canada, Canada 2 employs a precautionary principle. Are 3 you aware of that? 4 A. Yes. 5 Q. Do you know what a 6 precautionary principle is? 7 A. I do know what a 8 precaution -- 9 Q. What is it? 10 A. A precautionary principle is 11 one where you -- in my -- in my opinion 12 and what -- to my knowledge, it's a 13 principle in which you use every 14 precaution in terms of assessment, in 15 terms of use in animal models and human 16 models. You follow precaution. 17 Q. Okay. The draft screenings 18 assessment, Exhibit Number 9, contains 19 the following statement -- and I only -- 20 I only have your copy. 21 A. Oh okay. 22 Q. I'm going to read it to you 23 and tell me whether you agree with it. 24 A. Okay.</p>	<p style="text-align: right;">Page 544</p> <p>1 "The specific mechanisms and 2 cascade of molecular events by which talc 3 might cause ovarian cancer have not been 4 identified." 5 MS. O'DELL: Wait. Do you 6 mind showing Dr. Zelikoff? 7 MR. HEGARTY: Well, then I 8 won't have -- I'm just reading 9 this statement. 10 MS. O'DELL: Well, but if 11 you're reading from the draft 12 assessment -- 13 MR. HEGARTY: You know what, 14 I -- this is the only copy I have. 15 If you want to hand me your copy. 16 MR. TISI: I have my copy. 17 It has my notes on it. If you... 18 Do you want it? 19 MS. O'DELL: You're welcome 20 to my copy. 21 MR. HEGARTY: Thank you. 22 BY MR. HEGARTY: 23 Q. Page 18, second paragraph. 24 I was on Page 18, Doctor.</p>
<p style="text-align: right;">Page 543</p> <p>1 Q. "The etiology of most 2 ovarian tumors in general has not been 3 well established." 4 MS. O'DELL: What page are 5 you on, please? 6 MR. HEGARTY: Page 18. 7 BY MR. HEGARTY: 8 Q. Do you agree with that 9 statement? 10 A. Please read it again. 11 Q. "The etiology of most 12 ovarian tumors in general has not been 13 well established." 14 A. The etiology is -- has not 15 been well established. But it has been 16 studied. But there -- okay. I'm done. 17 Q. The -- on page -- strike 18 that. On Page 21 -- 19 A. Of my report? 20 Q. No, of the -- 21 A. Health Canada. 22 Q. -- health assessment states 23 the following statement and tell me 24 whether you agree with it.</p>	<p style="text-align: right;">Page 545</p> <p>1 A. You handed it to me like 2 this, sir. 3 Q. Right. On page -- I'm 4 sorry, Page 21. 5 A. This is Page 21. 6 Q. Sorry. Page 21, second 7 paragraph. The statement at the end 8 reads, "However, the specific mechanisms 9 and cascade of molecular events by which 10 talc might cause ovarian cancer have not 11 been identified." 12 Do you agree with that 13 statement? 14 MS. O'DELL: Objection to 15 form. 16 THE WITNESS: That's a 17 statement here. 18 BY MR. HEGARTY: 19 Q. Do you agree with that 20 statement? 21 A. Oh, I'm sorry. I'm sorry, 22 I've lost -- Page 21, what -- 23 Q. Page 21, second paragraph -- 24 A. -- what paragraph?</p>

<p style="text-align: right;">Page 546</p> <p>1 Under --</p> <p>2 Q. Last two lines.</p> <p>3 A. Under --</p> <p>4 Q. Under -- in the biologic</p> <p>5 plausibility section.</p> <p>6 A. I see it. Thank you.</p> <p>7 Q. It read -- the statement</p> <p>8 reads: The specific mechanisms and</p> <p>9 cascade of molecular events by which talc</p> <p>10 might cause ovarian cancer have not been</p> <p>11 identified.</p> <p>12 Do you agree with that</p> <p>13 statement?</p> <p>14 A. Yes, they have not been</p> <p>15 clearly and conclusively identified.</p> <p>16 Q. But that's not what that</p> <p>17 sentence reads. My question was do you</p> <p>18 agree with the sentence that I just read</p> <p>19 to you.</p> <p>20 A. It is -- I think it's a</p> <p>21 sentence taken out of text.</p> <p>22 Do I agree with the sentence</p> <p>23 as it is written? No. I would have to</p> <p>24 add the words, "have not been clearly</p>	<p style="text-align: right;">Page 548</p> <p>1 today it's not -- you're not using it to</p> <p>2 inform your opinions, correct?</p> <p>3 A. It is -- it is support and</p> <p>4 validation of my opinions.</p> <p>5 Q. You referenced IARC and its</p> <p>6 designation of asbestos. What has IARC</p> <p>7 designated talc for genital uses as?</p> <p>8 MS. O'DELL: Objection.</p> <p>9 THE WITNESS: I -- in -- in</p> <p>10 terms of classification, may I</p> <p>11 look at the document?</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Well, they've designated</p> <p>14 talc used --</p> <p>15 A. Fibrous -- fibrous --</p> <p>16 Q. -- for perineal use as 2B,</p> <p>17 correct?</p> <p>18 A. 2B, yes. Fibrous talc,</p> <p>19 correct.</p> <p>20 Q. You were asked about the</p> <p>21 deposition of Robert Glenn, correct?</p> <p>22 A. The past manager and</p> <p>23 director of NIOSH.</p> <p>24 Q. Yes.</p>
<p style="text-align: right;">Page 547</p> <p>1 identified."</p> <p>2 Q. So you don't agree with</p> <p>3 everything in the --</p> <p>4 A. Or established.</p> <p>5 Q. So you don't agree with</p> <p>6 everything in Health Canada's risk</p> <p>7 assessment, correct?</p> <p>8 MS. O'DELL: Objection to</p> <p>9 form.</p> <p>10 THE WITNESS: I -- I do not</p> <p>11 agree with this sentence, correct.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. You do rely on, for purposes</p> <p>14 of your opinions in this case, the draft</p> <p>15 screening assessment, correct?</p> <p>16 MS. O'DELL: Objection.</p> <p>17 THE WITNESS: No. That came</p> <p>18 out well after I handed in my</p> <p>19 final report, so it was not used</p> <p>20 to inform my opinion. It was</p> <p>21 supporting validation for my</p> <p>22 opinion.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. So still -- still through</p>	<p style="text-align: right;">Page 549</p> <p>1 A. Yes.</p> <p>2 Q. Did you read the entirety of</p> <p>3 his deposition?</p> <p>4 A. No, I did not.</p> <p>5 Q. Did you agree with</p> <p>6 everything he said in his deposition?</p> <p>7 A. I said I did not read the</p> <p>8 entirety. I can't answer.</p> <p>9 (Document marked for</p> <p>10 identification as Exhibit</p> <p>11 Zelikoff-49.)</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. I'm going to mark as</p> <p>14 Exhibit 49, portions of the deposition of</p> <p>15 Dr. Robert Glenn. If you turn to the</p> <p>16 first page of that exhibit, Page 482.</p> <p>17 A. Page 482, yes.</p> <p>18 Q. Yes. Mr. Glenn was asked in</p> <p>19 the middle of the page, Lines 12 to 14,</p> <p>20 "Has the data also showed that talcum</p> <p>21 powder is not cytotoxic, meaning it</p> <p>22 doesn't damage cells?"</p> <p>23 Mr. Glenn answer's, "Yes."</p> <p>24 A. Yes.</p>

<p style="text-align: right;">Page 550</p> <p>1 Q. Did you cite that portion of 2 his testimony in your expert report? 3 MS. O'DELL: Objection to 4 form. 5 THE WITNESS: No. 6 BY MR. HEGARTY: 7 Q. Did you read it? 8 A. I said that I did not read 9 this in its -- in its entirety. 10 Q. Do you agree with that 11 sentence? 12 I'm sorry, do you agree with 13 his answer to that question? 14 MS. O'DELL: Objection to 15 form. 16 THE WITNESS: To the 17 question, "Has the data also 18 showed that talcum powder is not 19 cytotoxic, meaning it doesn't 20 damage cells?" 21 So if the question is do I 22 agree with that sentence -- do I 23 agree with his answer of yes, 24 there have been data showing, in</p>	<p style="text-align: right;">Page 552</p> <p>1 shows that talcum powder is not 2 mutagenic? There is. 3 Q. Did you cite that portion of 4 Mr. Glenn's testimony in your report? 5 A. No, I did not. 6 Q. If you look at the next page 7 at the top. The question, 2 through 7, 8 with the answer on 8. 9 A. Mm-hmm-hmm. 10 Q. Did you cite that question 11 and answer in your report? 12 MS. O'DELL: Object to the 13 form. 14 THE WITNESS: I did not cite 15 any of Dr. Glenn's information 16 because I -- I did not read it in 17 detail. 18 BY MR. HEGARTY: 19 Q. You can put that aside. 20 Is it your testimony that 21 you're more knowledgeable regarding talc 22 and ovarian cancer than Dr. Neel? 23 A. No, what my testimony is to 24 is that I have extensive knowledge in</p>
<p style="text-align: right;">Page 551</p> <p>1 certain circumstances, in certain 2 cell lines, that talcum powder has 3 not been shown to be cytotoxic at 4 certain concentrations. 5 BY MR. HEGARTY: 6 Q. Looking down at the next 7 question, 18 through 21, he's asked, "And 8 has the data also showed that talcum 9 powder is not mutagenic, meaning it 10 doesn't mutate genes?" 11 "Answer: Yes." 12 Do you agree with his answer 13 to that question? 14 A. I do not agree. I think 15 that the -- I do not agree with his 16 answer. I think that his -- that the 17 question has to be -- the question in my 18 opinion, it was ambiguous. And I'm not 19 sure what he was basing that on in terms 20 of his response. 21 If you -- if he was looking 22 at mutagenicity in terms of Ames assays 23 or yes, they have not shown mutagenicity. 24 So is there data that also</p>	<p style="text-align: right;">Page 553</p> <p>1 toxicological aspects, the cytotoxicity 2 of it, and the inflammatory responses 3 from an -- from an academic perspective 4 and a biological mechanism perspective. 5 Q. What is Dr. Neel's knowledge 6 of the toxicological aspects and the 7 toxicity of talc? 8 A. I do not know. 9 Q. What's his -- is he a 10 cancer -- strike that. 11 He is a cancer biologist, 12 correct? 13 MS. O'DELL: Objection to 14 form. 15 THE WITNESS: The only thing 16 I know about Dr. Neel is that he 17 is the director of the Cancer 18 Institute. I am not familiar with 19 his research. 20 BY MR. HEGARTY: 21 Q. Have you ever evaluated his 22 qualifications? 23 A. No. I was not on the search 24 committee nor do I have access to his CV.</p>

<p style="text-align: right;">Page 554</p> <p>1 Q. You made statements 2 indicating that you believe that you are 3 more knowledgeable than Dr. Neel 4 regarding the toxicities of talc. Is 5 that true? 6 A. What I do know is that he is 7 not a toxicologist. 8 Q. Do you know what his area of 9 expertise is? 10 A. He's -- OB/GYN and oncology. 11 Q. Do you know what his level 12 of knowledge is in the area of 13 toxicology? 14 A. I do not. 15 Q. Have you ever met him? 16 A. Yes, I have met him. 17 Q. Have you ever talked to him 18 about his qualifications in the area of 19 toxicology? 20 A. No, I have not. But I know 21 he is not a -- he is not considered a 22 toxicologist by his peers, by colleagues. 23 He is known as a cancer oncologist. He 24 is not known or recognized as a</p>	<p style="text-align: right;">Page 556</p> <p>1 Q. Are you a board-certified 2 oncologist? 3 A. I am not, never claimed to 4 be. 5 Q. Are you a board-certified 6 gynecologic oncologist? 7 MS. O'DELL: Wait a minute. 8 THE WITNESS: I am not, nor 9 have I ever claimed to be. 10 Because -- 11 BY MR. HEGARTY: 12 Q. You were asked -- you were 13 asked about whether you could do -- 14 whether there could be studies looking at 15 risk of cancer in women exposed to 16 cobalt, chromium, and nickel. Do you 17 recall those questions? 18 A. I do. 19 Q. Studies looking at exposures 20 of metals in humans are done all the 21 time. They are called retrospective 22 case-control studies, correct? 23 A. They are not done in a 24 laboratory nor is there insertion of</p>
<p style="text-align: right;">Page 555</p> <p>1 toxicologist. 2 Q. Who have you ever asked -- 3 who have you ever spoken with regarding 4 to Dr. Neel's qualifications as it 5 relates to toxicology? 6 A. I have not spoken to him 7 about his qualifications. My answer 8 comes from the fact that I am an active 9 member in the Society of Toxicology, but 10 nationwide and internationally. And also 11 I'm an active member in the International 12 Union of Toxicology and active member in 13 the other -- other toxicology programs 14 and societies. 15 And I have -- I have not 16 seen Dr. Neel at any of these, nor have I 17 heard of him being spoken at or about in 18 these -- in these meetings. 19 Q. Do you go to OB/GYN 20 conferences? 21 A. I do not. 22 Q. Do you go to oncology 23 conferences? 24 A. I do not.</p>	<p style="text-align: right;">Page 557</p> <p>1 those metals into humans. 2 Q. That's not my question. You 3 said -- you testified that there is no 4 way that you can do a study looking at 5 the effect of nickel in humans. That's 6 not true, is it? 7 MS. O'DELL: Objection to 8 form. Misstates -- 9 THE WITNESS: I'm sorry. 10 MS. O'DELL: -- the question 11 and the testimony. 12 Excuse me, Doctor. 13 THE WITNESS: I was -- I was 14 talking about clinical studies and 15 studies in people. 16 BY MR. HEGARTY: 17 Q. There are retrospective 18 case-control studies looking at exposure 19 of humans to nickel, correct? 20 A. That is -- those are 21 epidemiological studies. My 22 understanding of the question that was 23 asked of me had to do with laboratory 24 studies and intentional exposure.</p>

<p style="text-align: right;">Page 558</p> <p>1 Q. Well, can you cite for me 2 any epidemiologic studies showing an 3 increased risk of ovarian cancer in women 4 exposed to nickel? 5 A. Nickel alone, I have not 6 reviewed that. But I do know the IARC 7 document talks about it as a Class 1 8 carcinogen. 9 Q. Can you cite for me, any 10 retrospective case-control studies, 11 showing an increased risk of ovarian 12 cancer in women exposed to chromium? 13 A. Chromium alone? 14 Q. Yes. 15 A. No, I cannot. 16 Q. Same question as to cobalt? 17 A. No, I cannot. 18 Q. Can you cite for me any 19 case-control studies looking at whether 20 there's an increased risk of ovarian 21 cancer in women exposed to nickel, 22 chromium, and cobalt in combination? 23 A. I hope I understand your 24 question right. But what I am -- what</p>	<p style="text-align: right;">Page 560</p> <p>1 is not unethical, but to use it in 2 a clinical study would be 3 extremely unethical. 4 BY MR. HEGARTY: 5 Q. It would also be appropriate 6 to do cell studies looking at nickel, 7 cobalt, and chromium in ovarian cancer 8 cells, correct? 9 MS. O'DELL: Objection to 10 form. 11 THE WITNESS: Alone -- I'm 12 sorry. Alone or in combination? 13 BY MR. HEGARTY: 14 Q. Or all of the above. 15 A. Your question was it would 16 be unethical to do cell culture studies? 17 Q. Would it be unethical in 18 your opinion? 19 A. Not to do cell culture 20 studies. 21 Q. Have such studies been done? 22 A. I'm not sure about the 23 combination. There have been studies, a 24 number of studies that have been done in</p>
<p style="text-align: right;">Page 559</p> <p>1 I'm saying is yes, there is an increased 2 risk in exposure to talc because talc 3 contains, according to the J&amp;J documents, 4 and according to other studies that just 5 looked at talcum powder products, 6 contains nickel, cobalt, and chromium in 7 elevated levels. 8 Q. My question is specific to 9 looking only at exposure to cobalt, 10 nickel, and chromium. Can you cite for 11 me any case-control studies showing an 12 increased risk of ovarian cancer in women 13 exposed to those three metals in 14 combination? 15 A. No, I can't. 16 MS. O'DELL: Objection. 17 Asked and answered. 18 BY MR. HEGARTY: 19 Q. It would not be unethical to 20 do such a case-control study, correct? 21 MS. O'DELL: Objection. 22 THE WITNESS: A case-control 23 study or an epidemiological study 24 which uses data from populations</p>	<p style="text-align: right;">Page 561</p> <p>1 cell culture. I can't cite them all, 2 because there are numerous that have 3 looked at nickel or cobalt or chromium in 4 cell culture studies, and many that have 5 been done in my own laboratory. 6 Q. Can you cite to me any such 7 studies that have done those tests in 8 ovarian cells? 9 A. I'm sorry. When you say 10 "any such studies," do you mean cell 11 culture studies? 12 Q. Yes. 13 A. Well, the Shukla study, the 14 Saed studies. 15 Q. So the Shukla and Saed 16 studies applied nickel, chromium and 17 cobalt to the cells? 18 A. I'm sorry. I'm sorry. I 19 thought you said talcum powder. 20 Q. Doctor, listen to my 21 question. My question is can, you cite 22 for me any culture studies that have 23 applied nickel, cobalt, or chromium or 24 all three to ovarian cancer cells?</p>



<p style="text-align: right;">Page 562</p> <p>1 A. I cannot -- I have not seen 2 that literature, no. 3 Q. Those studies could be done, 4 correct? 5 A. Those studies could be done. 6 Q. They could be done in your 7 laboratory, couldn't they? 8 A. I have the facilities to 9 carry out those studies. 10 Q. You have not done those 11 studies? 12 MS. O'DELL: Objection to 13 form. 14 THE WITNESS: Correct. 15 BY MR. HEGARTY: 16 Q. You cited to the Cramer 2007 17 study, which I'm marking as Exhibit 18 Number 40. 19 (Whereupon, a discussion was 20 held off the stenographic record.) 21 (Document marked for 22 identification as Exhibit 23 Zelikoff-50.) 24 BY MR. HEGARTY:</p>	<p style="text-align: right;">Page 564</p> <p>1 of the first page on the right-hand 2 column. 3 A. Yes. 4 Q. The authors state that 5 the -- "First, the association is a 6 relatively weak" -- "a relatively weak 7 one; i.e., summary relative risk of 8 approximately 1.3." 9 Do you agree with that 10 statement? 11 MS. O'DELL: Objection to 12 form. 13 THE WITNESS: Number one, I 14 am not an epidemiologist so I'm 15 not testifying to epidemiological 16 odds ratio, whether that is weak 17 or not weak. 18 BY MR. HEGARTY: 19 Q. The next sentence says, 20 "Second, no clear increase in risk or 21 duration of use has been found in most 22 studies." 23 Do you agree with that 24 sentence?</p>
<p style="text-align: right;">Page 563</p> <p>1 Q. I'm marking as Exhibit 2 Number 50 the Cramer 2007 study that you 3 referred to in response to counsel's 4 questions. 5 A. Mm-hmm-hmm. 6 MS. O'DELL: Objection. 7 That misstates the record. I 8 never referred to the Cramer 9 study. 10 MR. HEGARTY: She cited it 11 in response to your questions. 12 MS. O'DELL: No, she did 13 not. But you may ask questions 14 about it, but that's not a proper. 15 MR. HEGARTY: Well, she 16 cited the Cramer 2007 article. 17 BY MR. HEGARTY: 18 Q. Do you find this article to 19 be a credible source of information for 20 you? 21 A. It was published in 22 Obstetrics and Gynecology. That is good 23 journal, reputable journal. 24 Q. And if you look at the top</p>	<p style="text-align: right;">Page 565</p> <p>1 MS. O'DELL: Objection to 2 form. 3 THE WITNESS: There are many 4 studies that do show that duration 5 plays a role. 6 BY MR. HEGARTY: 7 Q. That's not my question. My 8 question is do you agree with that 9 sentence? 10 A. I see. 11 MS. O'DELL: Objection to 12 form. Asked and answered. 13 THE WITNESS: I do not agree 14 that there is no clear -- there is 15 some evidence that leads to an 16 increase in risk associated with 17 duration of use. 18 BY MR. HEGARTY: 19 Q. So you don't agree with that 20 sentence? 21 A. So I do not completely agree 22 with that sentence. 23 Q. The next sentence reads, 24 "Third, the ability of talc used in the</p>

<p style="text-align: right;">Page 566</p> <p>1 genital area to enter the pelvic cavity 2 has not been conclusively proven." 3 Do you agree with that 4 sentence? 5 A. None of these are -- none of 6 these sentences are cited or referenced 7 by the way. 8 It has not been conclusively 9 proven. I agree with the sentence. 10 May I -- 11 Q. You cited as well to the 12 Keskin paper. You cited that several 13 times, including in response to counsel's 14 questions. 15 A. Yes, I did. I recall that. 16 Q. The Keskin paper was an 17 animal study that did not show tumor 18 formation from application of talc, 19 correct? 20 MS. O'DELL: Object to the 21 form. 22 THE WITNESS: If you allow 23 me to specifically look for that, 24 please.</p>	<p style="text-align: right;">Page 568</p> <p>1 findings that led to inflammation 2 including an increased number of 3 follicles, and that goes to 4 biological plausibility. 5 BY MR. HEGARTY: 6 Q. Did you agree with that 7 finding? 8 A. That there were increased 9 number of follicles? 10 Q. Yes. 11 A. And the histopathology? 12 That there was foreign body 13 reactions and that there were infections, 14 I agree with those studies. 15 Q. Do you agree with the 16 statement that the author made that this 17 effect seems to be in the form of foreign 18 body reaction or infection rather than a 19 neoplastic change? 20 A. I'm sorry, could you tell me 21 where that might be? 22 Q. Again, in the conclusion 23 section that we have just been looking 24 at.</p>
<p style="text-align: right;">Page 567</p> <p>1 BY MR. HEGARTY: 2 Q. I'll mark it as Exhibit 51. 3 (Document marked for 4 identification as Exhibit 5 Zelikoff-51.) 6 BY MR. HEGARTY: 7 Q. The Keskin paper over in the 8 conclusion section on Page 927 says that 9 with regard to the reported effects of 10 talc, "This effect seems to be in the 11 form of foreign body reaction or 12 infection rather than a neoplastic 13 change." 14 A. Which is inflammation. 15 Q. And in this study it showed 16 no neoplastic changes in any of the 17 animal study, correct? 18 MS. O'DELL: Object to the 19 form. 20 You may answer. 21 THE WITNESS: It was -- he 22 did not find or they did not find 23 that there was neoplastic changes, 24 but they did find a number of</p>	<p style="text-align: right;">Page 569</p> <p>1 A. Mm-hmm-hmm. 2 Well, a foreign body 3 reaction can -- is an immunological 4 response. Whether it's considered a 5 neoplastic change, likely not. A foreign 6 body reaction does not necessarily -- is 7 not necessarily known as a neoplastic 8 response, correct. 9 Q. And you -- you didn't cite 10 that statement from the Keskin paper in 11 your report, did you? 12 A. Not that I recall. 13 Q. Do you agree with the -- 14 A. But my -- my role was to 15 define biological plausibility. So what 16 I did -- what I did put in my report were 17 the things that indicated to me that 18 there was inflammation. 19 Q. You agree with the 20 conclusions from the Taher paper? 21 MS. O'DELL: Object to the 22 form. 23 Doctor, it's in this stack. 24 THE WITNESS: Okay. Thank</p>

<p style="text-align: right;">Page 570</p> <p>1 you. Oh, thank you.  2 BY MR. HEGARTY:  3 Q. Second page, Line 34, on the  4 second page.  5 A. In the abstract?  6 Q. Yes.  7 MS. O'DELL: Give me just a  8 moment, I'm sorry. I'll pull out  9 my copy.  10 THE WITNESS: I'm sorry,  11 should I wait?  12 MR. HEGARTY: I think Leigh  13 wants you to wait.  14 MS. O'DELL: Okay. Go  15 ahead. I'm sorry.  16 BY MR. HEGARTY:  17 Q. Do you agree with the  18 statement made in Line 34?  19 A. Perineal use of talc powder  20 is a possible cause of human ovarian  21 cancer?  22 Q. Yes.  23 A. I believe that it's more  24 than a possible cause. I believe that</p>	<p style="text-align: right;">Page 572</p> <p>1 counsel has it. I'll hand it to you. If  2 you'll --  3 A. Oh. You mean the draft  4 screening assessment?  5 Q. Yes. Sorry, I was going to  6 it by the wrong name. It is Exhibit --  7 A. 9.  8 Q. Thank you.  9 If you'll turn to Page 16.  10 A. I see that, Keskin et al.,  11 2009, it's the first statement under  12 human studies.  13 Q. Yes. Right above that when  14 it refers to the Keskin and colleagues  15 2009. What was the conclusion that the  16 sentence beginning "while no cancer"? Do  17 you see that above human studies on  18 Page 16?  19 A. The conclusion, "while no  20 cancer"?  21 Q. Yes.  22 A. "While no cancer/precancer  23 effects were observed, Keskin and  24 colleagues noted the study's duration may</p>
<p style="text-align: right;">Page 571</p> <p>1 there's biological plausibility which  2 shows that it -- it could be, it is  3 linked to human ovarian cancer.  4 Q. So you don't -- you disagree  5 with that statement?  6 A. One could say that, taking  7 it literally, that it is certainly a  8 possible cause. I just believe that it  9 is greater than a possible cause.  10 MR. HEGARTY: Okay. Thank  11 you. I think that's it for my  12 time.  13 MS. O'DELL: Okay.  14 - - -  15 EXAMINATION  16 - - -  17 BY MS. O'DELL:  18 Q. Doctor, I just have two  19 questions for you.  20 I think you had the causal  21 assessment in front of you.  22 A. Do you mean the Taher?  23 Q. No, ma'am. The actual  24 causal assessment -- actually I think</p>	<p style="text-align: right;">Page 573</p> <p>1 have been too short to note these types  2 of effects."  3 Q. And in regard to -- and  4 that -- that statement's consistent with  5 the statements that you've included in  6 your report, fair?  7 MR. HEGARTY: Objection to  8 form.  9 THE WITNESS: Yeah.  10 BY MS. O'DELL:  11 Q. And then secondly you were  12 asked a question, several questions about  13 the actual Keskin paper itself. And I  14 think it's still in front of you. Do you  15 see that? It's Exhibit 51. Yeah,  16 Exhibit 51.  17 A. This is it, thank you.  18 Q. Okay. And I'll turn you to  19 the conclusion please, Dr. Zelikoff.  20 A. That is on Page 930?  21 Q. It's 927 actually. One of  22 the conclusions, at least the ones I -- I  23 was looking at.  24 927. Do you see that?</p>

<p style="text-align: right;">Page 574</p> <p>1 A. I see.  2 Q. And counsel directed your  3 attention to the sentence that said,  4 "However this effect seems to be in the  5 form of foreign body reaction or  6 infection rather than neoplastic change."  7 Do you see that? Recall  8 those questions --  9 A. In the conclusion section?  10 Q. Yes.  11 A. On Page --  12 Q. 927.  13 A. "However this effect seems  14 to be in the form of a foreign body  15 reaction or infection rather than a  16 neoplastic change."  17 Yes, I see that.  18 Q. And if you'll look to the  19 next sentence, what also did the authors  20 conclude?  21 A. "Results of previous studies  22 are in favor of a neoplastic effect,  23 particularly in the ovaries."  24 And they conclude that more</p>	<p style="text-align: right;">Page 576</p> <p>1 dissolved in DMSO.  2 Q. Is -- is the data included  3 in this manuscript, was that part of  4 the -- the data you relied on in abstract  5 in reaching your opinions in this case?  6 A. In abstract form, yes. That  7 was all that was -- that was available  8 since this only came out a few weeks ago.  9 MS. O'DELL: Okay. I have  10 nothing further.  11 THE WITNESS: Accepted for  12 E-press a few weeks ago.  13 MS. O'DELL: Okay. I have  14 nothing further.  15 - - -  16 EXAMINATION  17 - - -  18 BY MR. HEGARTY:  19 Q. Dr. Zelikoff, in looking at  20 the Keskin paper, in -- in particular at  21 the portion of the conclusions section  22 that counsel asked you to read --  23 A. Yes.  24 Q. -- the results of previous</p>
<p style="text-align: right;">Page 575</p> <p>1 experimental and clinical studies are  2 warranted.  3 Q. All right. And one other  4 question. You were asked about the Saed  5 studies regarding talc and cell culture,  6 both ovarian cancer cells and regular  7 cells.  8 A. Yes. I recall.  9 Q. And you were asked earlier  10 about the manuscript that's been marked  11 as --  12 A. Exhibit 8.  13 Q. -- Exhibit 8.  14 Is it -- is it -- turn to  15 Page 5 of the manuscript please.  16 A. I see it.  17 Q. And looking at the top, did  18 Dr. Saed use Johnson's Baby Powder as a  19 part of the -- his treatment of cells?  20 A. Yes. It's Page 5, top,  21 treatment of cells, talcum powder from  22 Fisher -- Fisher Scientific or Baby  23 Powder from Johnson &amp; Johnson, and the  24 numbers of the lots are given were</p>	<p style="text-align: right;">Page 577</p> <p>1 studies, that sentence?  2 A. Yes, I see it on Page 927.  3 Q. Can you cite for me any  4 previous studies to Keskin which were in  5 favor of a neoplastic effect?  6 A. Culture cell studies that  7 have looked at proliferation, increased  8 proliferation which was seen in the Saed  9 studies and in the abstract.  10 Proliferation is one hallmark of the  11 carcinogenic process.  12 Q. Doctor, listen to my  13 question. This publication was in 2008.  14 A. Okay. I'm sorry.  15 MS. O'DELL: 2009 I believe,  16 but go ahead.  17 THE WITNESS: 2009.  18 BY MR. HEGARTY:  19 Q. Received December 2009.  20 Published 2009.  21 The sentence reads: The  22 results of previous studies before 2009  23 are in favor of neoplastic effect.  24 What studies are they</p>

<p style="text-align: right;">Page 578</p> <p>1 referring to?</p> <p>2 A. I don't know because it's</p> <p>3 not referenced.</p> <p>4 MR. HEGARTY: I don't have</p> <p>5 any additional questions.</p> <p>6 MS. O'DELL: Nothing</p> <p>7 further, Doctor.</p> <p>8 THE VIDEOGRAPHER: Stand by</p> <p>9 please. This marks the end of</p> <p>10 today's deposition. The time is</p> <p>11 9:03 p.m. Off the record.</p> <p>12 (Excused.)</p> <p>13 (Deposition concluded at</p> <p>14 approximately 9:03 p.m.)</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>	<p style="text-align: right;">Page 580</p> <p>1 INSTRUCTIONS TO WITNESS</p> <p>2</p> <p>3 Please read your deposition</p> <p>4 over carefully and make any necessary</p> <p>5 corrections. You should state the reason</p> <p>6 in the appropriate space on the errata</p> <p>7 sheet for any corrections that are made.</p> <p>8 After doing so, please sign</p> <p>9 the errata sheet and date it.</p> <p>10 You are signing same subject</p> <p>11 to the changes you have noted on the</p> <p>12 errata sheet, which will be attached to</p> <p>13 your deposition.</p> <p>14 It is imperative that you</p> <p>15 return the original errata sheet to the</p> <p>16 deposing attorney within thirty (30) days</p> <p>17 of receipt of the deposition transcript</p> <p>18 by you. If you fail to do so, the</p> <p>19 deposition transcript may be deemed to be</p> <p>20 accurate and may be used in court.</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>
<p style="text-align: right;">Page 579</p> <p>1</p> <p>2 CERTIFICATE</p> <p>3</p> <p>4</p> <p>5 I HEREBY CERTIFY that the</p> <p>6 witness was duly sworn by me and that the</p> <p>7 deposition is a true record of the</p> <p>8 testimony given by the witness.</p> <p>9</p> <p>10 It was requested before</p> <p>11 completion of the deposition that the</p> <p>12 witness, JUDITH ZELIKOFF Ph.D., have the</p> <p>13 opportunity to read and sign the</p> <p>14 deposition transcript.</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>12 _____</p> <p>13 MICHELLE L. GRAY,</p> <p>14 A Registered Professional</p> <p>15 Reporter, Certified Shorthand</p> <p>16 Reporter, Certified Realtime</p> <p>17 Reporter and Notary Public</p> <p>18 Dated: January 23, 2019</p> <p>19 (The foregoing certification</p> <p>20 of this transcript does not apply to any</p> <p>21 reproduction of the same by any means,</p> <p>22 unless under the direct control and/or</p> <p>23 supervision of the certifying reporter.)</p> <p>24</p>	<p style="text-align: right;">Page 581</p> <p>1 - - - - -</p> <p>2 E R R A T A</p> <p>3 - - - - -</p> <p>4 PAGE LINE CHANGE</p> <p>5 _____</p> <p>6 REASON: _____</p> <p>7 _____</p> <p>8 REASON: _____</p> <p>9 _____</p> <p>10 REASON: _____</p> <p>11 _____</p> <p>12 REASON: _____</p> <p>13 _____</p> <p>14 REASON: _____</p> <p>15 _____</p> <p>16 REASON: _____</p> <p>17 _____</p> <p>18 REASON: _____</p> <p>19 _____</p> <p>20 REASON: _____</p> <p>21 _____</p> <p>22 REASON: _____</p> <p>23 _____</p> <p>24 REASON: _____</p>

Judith Zelikoff, Ph.D.

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ACKNOWLEDGMENT OF DEPONENT

I, \_\_\_\_\_, do  
hereby certify that I have read the  
foregoing pages, 1 - 583, and that the  
same is a correct transcription of the  
answers given by me to the questions  
therein propounded, except for the  
corrections or changes in form or  
substance, if any, noted in the attached  
Errata Sheet.

\_\_\_\_\_  
JUDITH ZELIKOFF Ph.D.      DATE

Subscribed and sworn  
to before me this  
\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.  
My commission expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public

Page 583

LAWYER'S NOTES

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